Original Articles.

ON TERRITORIAL AUTONOMY IN CEREBRAL CIRCULATION AND ITS RÔLE IN THE GENESIS OF SYMPTOMS IN THE PSYCHONEUROSES.*

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In a paper on hysteria read before the American Neurological Association June 20th, 1884, Dr. Walton[1] makes the following statement; "Just what changes occur in the brain in hysteria, we do not know, and are not likely to decide for some time, but it will not be inappropriate, as bearing on the connection between hysteria and the ovaries, to present a few arguments here in favor of the vasomotor theory, by no means as underlying all hysteria or hysterical symptoms, but as best explaining that set, at least, of so-called hysterical cases in which hemianesthesia is the principal symptom.....

"It has been urged that the changes in cerebral activity, giving rise to these and all other hysterical symptoms, are dynamic, and not susceptible of explanation by so simple a physical phenomenon as contraction and relaxation of blood-vessels. To me, however, the explanation implicating the blood-vessels is by far the most satisfactory provided it meets all the requirements, and this it seems to do in at least the class of hysterical patients under consideration. ....;the sudden loss of function of the cortical cells of half the brain, as seen, for example, in hemianesthesia, may easily be imagined to supervene suddenly upon a more or less completed contraction of cortical blood vessels on that side from irritation of the sympathetic system in some part of the body. Loss of function would in this case persist as long as the contraction of vessels so continued, and at the same time the nerve cells would be ready to take up their duties instantly with the return of blood through cessation of the vascular spasm.....

"This theory by no means limits the cerebral disturbance to one side of the brain, nor on the other hand does it preclude a limitation of the vasomotor change to a small part of the cortex, as, for example, to that concerned in particular motions or sensations. At the same time it well explains the tendency of the symptoms to spread over an entire half of the brain and hence, of the body. To explain the predominance of sensory over motor symptoms, or the opposite, we have only to suppose the vascular spasm more complete over one than over another portion of the cortex."

In the discussion which followed the reading of the paper, the speakers, in the main, dissented from Dr. Walton's theory, but nobody brought forward the only insurmountable objection that could validly be raised to it, namely, that Dr. Walton's assumption of the existence of cerebral vasomotor nerves was entirely unsupported by any physiologic or anatomic researches up to that time made.

The history of the cerebral vasomotor nerves forms, to my mind, one of the most curious chapters in physiologic literature. As late as 1890. Sir Michael Foster,[2] in the third edition of his text book on physiology, says: "Moreover the flow of blood to, and consequent change in the bulk of the brain, as measured by the venous outflow, may be modified independently of changes in the general blood pressure. For instance, stimulation of the motor region of the cortex quickens the venous outflow, without producing any marked change in the general blood pressure; *this feature becomes very striking at the onset of epileptiform convulsions* when these make their appearance. It is difficult not to connect such a result of functional activity with some special vasomotor nervous arrangement comparable to that so obvious in the case of a secreting gland."

From 1890 to 1897 no noteworthy contribution to the literature of the nerves in question was made. In the latter year Hill and Bayliss,[3] after much elaborate and painstaking experimental work came forward with the following ultimata:—first, that no evidence was found by them of the existence of cerebral vasomotor nerves, either by means of stimulatoin of the vasomotor centre, or central end of the spinal cord after division of the cord in the upper dorsal region, or by stimulation of the stellate ganglia—in other words, by stimulation of the whole sympathetic supply to the carotid and vertebral arteries; second, that evidence is not forthcoming of the existence of any local vasomotor mechanism; and third, that the cerebral circulation in normal conditions passively follows the changes in the general arterial and venous pressures.

Curiously enough, in the self-same year, Obersteiner,[4] by means of the gold-and-sodium chloride stain, was able to demonstrate the presence of vasomotor nerves in even the finer cerebral vessels. Hill[5] had admitted the presence of undoubted muscular tissue in the vessels of the pia, but Obersteiner[6] went a step farther and, having pointed out the presence of a fully developed muscular media in all intracranial vessels, down to the finest subdivisions (Ubergangsgefässe) regarded this finding as sufficient evidence in and of itself of their innate power of independent contraction and dilatation. He laid great stress, however, on the ease with which the cerebral vasomotors became paretic and lost their power to respond at a time when those of other organs responded readily.

During the next year the published work of both Gulland[7] and Morison[8] abundantly confirmed Obersteiner's observation, and the existence of a special cerebral vasomotor apparatus

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seemed to be an established fact. There have been subsequent observations made in this same field although they are relatively few in number. In the main they substantiate the opinions of Obersteiner, Gulland and Morison. Four in particular are interesting by reason of the method employed. As you probably well know, it is now an almost universally accepted fact among physiologists that a positive reaction to adrenalin is a trustworthy proof of the existence and nature of the sympathetic nerves of an organ, and in the four instances just alluded to, the adrenalin test was made. Spina[9] found, after intravenous injection of adrenalin extract, that the cerebral vessels were markedly dilated; to such an extent, indeed, that, with an incised dura, a hyperemia sufficient in degree to cause a brain prolapse could ensue. By direct application of the same substance to the same cerebral vessels, Biedl and Reiner[10] found that these vessels could be brought into a state of contraction, but they also noted that when the pressure increase in the general circulation had become established, the brain anemia gave way before the general high blood-pressure.

Protopopoff[11] noted that either immediately or within a few seconds after the intravenous injection of adrenalin, a very marked arterial anemia followed and continued for from two to five minutes according to the dose employed. If the latter were large, the anemia was followed by a hyperemia of shorter duration. At times the effect produced was undulatory in character, that is to say, successive cycles of anemia and hyperemia to the number of three or four were observed. The venous circulation of the brain was either not affected at all or showed merely a slight stasis. It is Protopopoff's opinion that only the capillaries contract and that the calibre of the visible arteries is not changed. This contraction he looks upon as the result of the direct action of the adrenalin upon the vessel walls rather than of excitation of the bulbar vasomotor centre. To this same contraction rather than to increased cardiac energy he attributes the heightened blood-pressure. Adrenalin introduced into the stomach, he found to be absolutely inefficacious.

The last observation to be mentioned, that of Wiggers,[12] is the most noteworthy. Before making his experiment this author carefully considered all possible sources of technical inaccuracy, and ingeniously contrived to eliminate them. His experimental material was the decapitated head of a large dog. His conclusions are as follows:—

"1. By perfusing the isolated brain under constant temperature and pressure with a suitable solution and continuously recording the entire venous outflow, the effect of influences which alter the size of the brain vessels can be definitely ascertained.

"2. The application of adrenalin solution to such a preparation in such a way as not to introduce factors themselves conducive to outflow change, caused reactions which corresponded to those obtained from the vessels of other regions.

"3. These reactions, if induced through the stimulation of vasomotor nerve ends, as claimed by certain workers, supply physiological evidence of the existence of such nerves."

In spite of certain rather marked discrepancies in the results obtained by the observers quoted, it seems to the writer that the bulk of the evidence unquestionably establishes the existence in the brain of a "special vasomotor nervous arrangement comparable to that so obvious in the case of a secreting gland."

When we take into consideration the highly differentiated functional value of the various brain areas and the wide variations in degree within which certain of these areas, either singly or in groups, are from moment to moment called into activity, while others either adjacent or remote, are practically quiescent, it is impossible to believe that the cerebral circulation passively follows the changes in the general arterial and venous pressures. Not only in the secreting glands but elsewhere throughout the economy, Nature has provided for local activity and local rest—in other words, for local waste and repair—in the form of circulatory autonomy. And it is entirely incredible that having thus endowed the vegetative organs, for example, she should freakishly have turned her back upon the brain.

In 1899, in a paper[13] on traumatic cerebral edema, I exploited what I believed to be the rôle played by the cerebral vasomotors in the production of this pathologic condition. At that time I was quite unaware that Dr. Walton had advanced the theory that these same nerves were the medium through which hysteric symptoms came into being. I was equally ignorant of the existence of his theory when the present paper—the outcome of long and careful independent consideration of the subject under discussion—was begun. It gives me, therefore, the greatest pleasure to announce at this time that, so far as the views about to be set forth relate to the pathology of hysteria, they are, in essence, identical with those published by Dr. Walton in 1884.

Directly we establish the existence of the power of independent dilation and contraction on the part of the vessels of the brain, we may logically assume that that organ, in common with other parts of the economy provided with an identical autonomic circulatory apparatus, receives, under normal circumstances, a supply of blood nicely proportioned in quantity to the functional activity of the moment. And when we consider that this activity is a constantly changing one with regard to both area and intensity, I think we may carry our assumption farther and safely postulate the existence of a territorial autonomy in cerebral circulation.

Physiologically, we have presumptive evidence of it on every hand. For example, when the muscular system is practically in a condition of absolute rest and the mind is intensely absorbed

in study, it is unbelievable that the Rolandic area and those which govern certain of the special senses, notably hearing and smell, are each receiving at the same time an amount of blood equivalent to that circulating through the prefrontal region of the cortex. It is equally unbelievable that in the cortex of a person walking along with hands in pockets, deeply engaged in pondering some perplexing problem, an equal volume of blood is passing through the prefrontal lobes and those which preside over the inert upper extremities and the automatically acting lower respectively. If it were necessary, examples of this sort could be multiplied almost indefinitely.

Pathologically, we have two forms of presumptive evidence of the existence of cerebral territorial circulatory autonomy—direct and indirect. The first is clearly manifest when the cranium is opened and certain portions of the cortex observed in cases where the brain has been contused by a diffused traumatizing force. Here one not infrequently finds in the absence of all discoverable pressure from within or without, cortical areas that are absolutely pulseless side by side with others which are pulsating normally. This fact, striking as it is, is easily paralleled in significance by the experience of surgeons who are constantly discovering, even in exploratory operations upon non-traumatized brains, that anything beyond the most gentle manipulation of the cortex is followed by cessation of pulsation in the regions palpated.

Indirect evidence on the point in question is derived from observations in regions other than the brain whose vessels are supplied by the autonomic system. Here, for the sake of brevity, will be mentioned only the striking and common examples of morbid local autonomic function, namely, isolated congestion of the ears, spontaneous ecchymoses upon the surface of the extremities, spontaneous edema and the various forms of akroasphyxiation. The last-named term is to be taken in its broadest sense and is meant to include manifestations ranging in severity from the more or less permanently cold and mottled extremities and the so-called dead fingers of the neurotic to the gangrene of the victim of Raynoud's disease.

The evidence thus far adduced may fail to bring about a universal admission of the existence of an autonomic, particularly of a territorially autonomic cerebral circulatory system. But it seems to me only fair to maintain that the facts brought forward in the hope of inducing belief in its existence are, to say the least, quite as material as those which underlie many of the generally accepted beliefs of neurologic and psychiatric science. And when it comes to a concrete conception of the pathologic substratum of the clinical phenomena observed in those nervous states broadly termed neuroses and psychoneuroses, it seems to me infinitely more scientific and more in harmony with the terms of pathology to designate it as a cerebral vasomotor ataxia, than to evade the issue with purely psychologic abstractions. When one speaks, for example, of hysteria as a dissociation of the personality, a limitation of the field of consciousness or a conflict in the unconscious it is tantamount to a begging of the question—to an attempt at explaining a pathologic process by a single symptom chosen arbitrarily from the great symptomatic complex to which the process gives rise.

The direct and absolute relationship of vasomotor activity to the normal functioning of a part has never been more strikingly shown than in the experimental work of Cannon[14] upon the alimentary canal of animals. This observer found that not only were the secretory activities of the stomach affected by the stronger emotions but that the movements of the stomach and, indeed, of almost the entire alimentary tract as well, were wholly stopped during excitement. If we had no other facts upon which to base an analogy it seems to me that Cannon's findings, in and of themselves, warrant the assumption that the disordered brain function underlying hysteria, is directly traceable to changes in vascular tension.

The mode of onset, the distribution and the general behavior of hysterical symptoms all accord with such a view. In the emotionally induced crises we see very clear evidence of the varying degrees with which different brain areas respond to the change in vascularity. Beginning with the small facial muscles the motor excitement affects progressively more numerous muscles and larger muscles and finally ends in sardonic laughter and violent contortions. When the motor storm is over we discover the havoc wrought in the vasomotors of certain brain areas by the pathologic stimulation of the emotion. This is usually in the form of anesthesia distributed in disseminated islets or involving an entire half of the body; of mono- or hemi-plegia, a contracture of a limb or an abolition of function of one of the sense organs. Nothing could more clearly indicate a territorial vasomotor paresis than this.

The same paresis is manifest when one or more of the above phenomena appear, as is sometimes the case, without any preceding emotional storm, and it is here that the notion of territorial circulatory autonomy gets its strongest support.

Phenomena in the intellectual sphere, such as changes in the personality, are explainable, I believe, on precisely the same ground. In recorded cases where hysterics have, through successive retrograde changes, dropped from the intellectual level of adult life to that of infancy, the extent of degradation noted in the successive changes is probably directly proportionate to variations in local vascular tension. If we seek for analogous phenomena elsewhere in brain pathology, we find them in the retrograde mental changes accompanying the cerebral anemia of atheroma and syphilis. In the two latter dis-

eases, to be sure, the anemia which produces intellectual retrogradation leads also to cellular decay. And it may properly be objected that no such cellular decay is found in hysteria. In the great majority of cases cellular decay is of course absent, because the extreme variations in the tension of the brain arteries in hysteria are almost never of sufficient duration to permit of such a pathologic process. That this is not universally the case, however, I hope to show in a subsequent paper where I shall report the complete microscopic findings in the brain of a case of hysteria of unquestionable genuineness.

Cellular degeneration does not take place in those brain areas whose perturbation of function is manifest by the so-called permanent stigmata, which, incidentally, are always sensory or sensorial in character; or by such apparently more or less persistent phenomena as hemiplegia, monoplegia and contracture, because these phenomena are in reality intermittent and do not persist during sleep.

It might pertinently be asked upon what grounds the rather wide variations in cerebral vascular tension, which are assumed to regulate the variations in the severity of the hysterical phenomena, are based. In reality, it is based in part upon the experimental work, particularly that of Protopopoff, quoted above, and in part upon analogy, since precisely the same variations are manifest in the akroasphyxiations where widely varying degrees of intensity of vascular spasm are betrayed, as has been said, by coldness and mottling of the skin, by the so-called dead fingers, by akrocyanosis and by actual gangrene. Analogous variations may also be found in the case of the stomach and bladder during states of emotional excitement.

Edema of brain tissue consequent upon vasomotor ataxia probably rarely ensues on account of the transitory character of the ataxia and the really moderate degree to which the ataxia is probably in most cases limited. In the rare cases in which it might occur it would naturally be limited in distribution and readily carried off through the sinuses.

The physiologic and pathologic principles above set forth seem to the writer to apply with equal force to the interpretation of the clinical manifestations of epilepsy and migraine.

In the former disease the territorial defects in arterial functioning are clearly manifest in spasms confined to limited groups of muscles and to sudden changes in the personality. The more diffused effects of vasomotor ataxia are probably responsible for the grand mal attacks. The difference between epilepsy and hysteria, pathologically speaking, lies in the degree of activity rather than in the nature of the provocative agent.

The same statement is also undoubtedly applicable to the relationship between the above two diseases and migraine. In the last named the vascular spasm is peculiarly territorial, as ophthalmoscopic examination made during the attack would seem to indicate. Parisotti,[15] for example, had the opportunity of making such an examination and found that, with the loss of the lower field of vision, there was marked narrowing of the arteries of the upper half of the retina, with normal calibre of those of the lower half. Subsequent to the attack the spasm had disappeared.

Quaglino[16] found narrowing of the calibre of the retinal arteries during attacks of scintillating scotoma lasting from five to fifteen minutes, during which there was transitory loss of vision, with bright elliptic figures bounded above by a radiating halo.

Seagrist[17] observed marked narrowing of the retinal arteries on the side of the hemicrania during the attack and was able to corroborate the observations during a second attack.

To those who welcome the abstruse, the nebulous and esoteric in theories concerning the pathology of the psychoneuroses, so simple a conception as that of a territorial vasomotor ataxia will make no appeal. There are, however, certain strong points in its favor which cannot be gainsaid. These have already been hinted at or specifically mentioned, but will, I think, bear recapitulation here: first, it is universally intelligible; second, it does not attempt to explain a pathologic process by a single clinical symptom. to which the process gives rise; and third, it harmonizes with the general concepts of pathology.

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DEATHS FROM SNAKE-BITE IN INDIA.—In the year 1908, 19,738 persons died of snake-bite in India; in 1909, 21,364; in 1910, 22,478. The number of persons killed by tigers in 1908 was 909; in 1909, 896; and in 1910, 853.

TEN TESTS BY WHICH THE PHYSICIAN MAY DETERMINE WHEN A PATIENT IS CURED OF GONORRHEA. A STUDY OF 1260 TESTS BY CULTURE AND SLIDE OF THE EXPRESSED PROSTATIC AND VESICULAR SECRETIONS.*

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THAT gonorrhea is a most serious and dangerous disease, is admitted by every physician who has observed its disastrous effects. It is responsible for one-fourth of all the blindness in the world, for thousands of deaths from secondary kidney disease following stricture, for many fatal cases of gonorrheal salpingitis and secondary peritonitis, and for metastatic gonorrhea (the so-called gonorrheal rheumatism) which results in temporary or permanent loss of function in one or many joints.

It is stated by specialists in that line that gonorrhea is the cause of 60-80% of all gynecological operations. We should add to our list of disasters sterility in both men and women.

From this brief review of the subject it is clear that all preventive measures which tend to lessen the spread of this disease should receive the thoughtful attention of every physician.

This paper will not discuss the ordinary clinical symptoms and treatment of this ailment, for it is wholly concerned in answering these very important questions, when is gonorrhea cured? How may we assure a patient who has had it that he may marry without danger of infecting his wife? It would seem at first sight that the answer was easy, that when the discharge stopped, and the urine was clear, and there was no return of the symptoms, that the case was well. This is usually the patients' view and because of this many serious and unfortunate results are observed. In spite of a clear urine and no discharge for months, gonorrhea may exist in an active and dangerous form. The explanation of this is found in the peculiar and complex structure of the urogenital organs. The urethra, in which the infection first occurs, is divided into the anterior and posterior portions by the compressor urethrae muscle. In the anterior portion there are along the urethra, the lacuna magna, and the follicles of Littrè and Morgagni, in all of which the gonococci may be concealed and give no symptoms.

In the bulbous urethra upon the floor are the two openings of Cowper's glands, the ducts of which are nearly two inches in length and end in small glands which are situated between the layers of the triangular ligament. Along this duct the infection may extend, giving rise to no symptoms until some cause starts it into activity, when it may infect the urethra and cause a profuse discharge. When we pass the compressor urethrae muscle we enter a portion of the urethra, which has many and important structures leading from it.

In the median line is the veru montanum, with the colliculus at its apex, on the walls of which the ejaculatory ducts are to be found. Along the floor are the prostatic sinuses, from which many glands lead into the prostate.

Connected by the ejaculatory ducts are the seminal vesicles, composed of tubules and blind cul-de-sacs.

It is possible for the gonococcus to enter these ducts and organs and remain latent many months or years. If the disease did not extend beyond the compressor urethrae muscle the danger of latency would not be as great, for probably 90% of relapsing cases are due to the prostate and vesicles, but the unfortunate fact is that from 60% to 80% of cases do progress beyond this muscle and become posterior, either with or without subjective symptoms. Hence it is obvious that before deciding upon a cure these organs should be carefully examined to determine that no organisms are present.

Assuming then, that a patient presents himself for examination as to whether he is cured and in proper condition to be married or to resume marital relation if already married, what steps should we take to assure him that the disease is no longer present?

Two classes of cases are seen: first, those in which the disease has been a first infection and has been acute and uncomplicated, and second, the chronic and protracted cases which have resisted treatment, are usually not primary infections and have resulted in some organic change in the anatomic structures.

In the first class there is less danger of latency than in the seconad.

1. *Discharge.* Regardless of which class the case belongs to, we should begin our examination by an inspection of the patient's urethra to find out whether any discharge is visible at the meatus and if not, the urethra should be gently stripped.

If present it should be looked at with suspicion and carefully examined for gonococci. If it contains only mucus, epithelium and an occasional pus cell it may be harmless, but a culture of it should be made to prevent any possibility of error. If no discharge is present inquiry should be made as to how long a time has elapsed since urination, and the patient should be told to carefully examine the meatus in the morning before urination and if discharge is present it should be placed on a slide for examination.

2. *Urine.* If no discharge is found we should now examine the urine as to its clearness and freedom from shreds. A turbid urine which

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does not clear upon the addition of acetic acid, shows a chronic inflammation, and the examination need proceed no further for it is obvious that the disease is still present. If clear and shreds are present, their size and action in the urine should be noted. If they are large and sink quickly they contain a large amount of pus and indicate an inflammatory area somewhere along the urinary tract which must be located and treated. If small, or light and flocculent, they are chiefly mucus and epithelium and are not usually of diagnostic value, merely indicating a mild urethral catarrh.

Not a great deal of information is gained from the microscopical examination of these large shreds. Some years ago the writer investigated them by preparing over a hundred slides and several hundred fields were gone over with the result that gonococci were found in only two large shreds.

Therefore other means will tell us more quickly and accurately whether the disease is present.

3. *Instrumental Examination of the Urethra.* By the bougie-a-boule we should examine the urethra for stricture and for tender areas. If the meatus is small it should be divided to permit the passage of instruments.

If a 28 or 30 bougie-a-boule passes freely to the bulb and shows no stricture or tender spot, and if a 28 sound passes to the bladder easily and without causing bleeding we may feel fairly well assured that no stricture exists in the urethra which might cause a relapsing discharge.

4. *Urethroscopic Examination.* By this we can ascertain the condition of the urethral mucous membrane and can occasionally see the minute openings of inflamed follicles.

If localized congestions or erosions are present they should be placed under treatment by local application of silver nitrate, which will provoke a discharge which should be examined.

5. *Examination of the Prostate and Vesicles.* —With the bladder partially filled with urine or boracic acid solution, the prostate and vesicles should be examined and their size, consistency and sensitiveness should be noted. If boggy, enlarged or tender, it indicates the need of treatment, at any rate, and the possibility of latent disease in these organs.

Whatever the condition found may be, gentle massage should be done and the vesicles stripped. The discharge appearing at the meatus should be saved on a slide, or Petri glass, and examined later.

The urine or solution should now be passed and if many "snowflake" masses are present they should be examined microscopically. They almost surely mean vesiculitis, and a patient having this cannot be called cured.

The very important and vital examinations of this expressed secretion by culture and slide will be later referred to at length.

6. *Test by Alcohol.* If the patient has successfully passed the foregoing tests he should now be permitted to take malt liquors (the so-called "beer test") or spirits.

The results should be carefully noted and also the character of any discharge produced by them.

7. *Coitus.* This test cannot properly be included among those which should be used, because no physician would permit a patient to risk infecting anyone else. Nevertheless, there are patients who have no sense of moral responsibility and from their errors certain conclusions can be formed, provided a protective covering is used. In case the discharge returns we know it was a relapse and not a new infection.

8. *Discharge Induced by Irritating Antiseptics.* This so-called provocative method consists in irrigating the urethra with some irritating chemical substance producing a urethritis, and the resulting discharge may show gonococci in the pus cells which have come from the deeper layers of the urethra. Nitrate of silver is the best antiseptic for this purpose and should be used as an anterior injection in the strength of 1-4000 and also as a deep urethral irrigation in the strength of 1% in a Keyes-Ultzmann syringe.

I am in the habit of passing a full sized sound before using the injections to dilate the urethra and to express from the follicles any retained contents.

9. *Bacteriological Examination of the Expressed Vesicular and Prostatic Secretion by Culture and Slide.* It is very interesting to note that in 1878, one year prior to the discovery of the specific organism of gonorrhea, the attention of the medical profession was called to the possibilities of its latency by Emil Noeggerath of New York. At that time his conclusions were ridiculed but today it is generally admitted that this disease may remain latent for months or years. The discovery of the gonococcus by Neisser in 1879 and its growth in a culture medium by Bumm in 1887 were the beginnings of better days, for it is no longer necessary to grope blindly in the darkness of ignorance for the causative factor of the disease, but its presence or absence may be seen in the clear daylight of scientific accuracy. The work so ably started by these pioneers has been the means of helping us to recognize many obscure conditions due to this organism. The difficulty of determining whether or not a patient is the host of the gonococcus has not been lessened since the publication of my first paper in 1911 (Chronic Relapsing Gonorrhea and the Methods Used to Determine Its Cure), and the larger series of cases which are now reported have emphasized the facts then stated.

These cases, which have been studied by my colleague, Dr. A. C. Pearce, and myself, have made us realize more than ever the responsibility placed upon the physician who is called upon

to determine whether or not a man may safely marry.

In order to answer this question intelligently it is absolutely necessary that the patient should be under observation a sufficient length of time to allow various tests to be made, which require at least three weeks. We have been repeatedly called upon to determine whether or not a man is cured of his ailment and been told by him that he has made all arrangements for marriage in a week or ten days. He would certainly be placed in a very unpleasant position in case our examination showed the presence of gonococci. The insidious character of latent gonorrhea has repeatedly manifested itself in our series of cases. Time and again a patient has been examined who has a clear urine, no visible discharge at any time, with few if any shreds, and upon stripping the seminal vesicles we have found them loaded with pus. Whether or not we find the gonococcus in the expressed secretion we consider this man a menace to the community and he should not be allowed to marry until we have improved his condition. The presence or absence of chronic seminal vesiculitis cannot always be made by rectal palpation alone. It can only be made in some cases by a physical and microscopical examination of the expressed vesicular secretion, because the vesicles are not always enlarged to touch.

Manifestly, then, such an examination is indispensable in ascertaining the presence of a latent form of gonorrhea. In considering the prostate as a harboring place for these organisms we believe that too much importance has been given to it. We know that the disease does infect the glands leading from the sinuses, the colliculus, and may enter the tissues of the gland itself, but these are reached by treatment through the urethra, while the seminal vesicles, with their honey-comb structure so ideal as culture media for organisms, can only be indirectly treated by stripping and in intractable cases by incision or excision of these organs. This means a severe and mutilating surgical operation, which may be dangerous to life. While this is rarely necessary, there are cases which will yield to no other means. The fact that so few patients who have a low grade chronic prostatitis are sterile would lead us to believe that its secretory action is not markedly disturbed, but it may still excite the motility of the spermatozoa and may also stimulate the testes in the formation of them. In the examination of a patient to determine the presence or absence of gonorrhea our methods are substantially the same as reported in our first paper.

The patient is instructed to report with a full bladder. Any secretion appearing at the meatus is obtained on a slide and reserved for future examination. The anterior urethra is cleansed with normal salt solution, which will not affect the growth of the gonococcus, and the glans penis is cleansed with alcohol, which causes a temporary burning sensation if it enters the meatus or comes in contact with the scrotum. The patient then assumes a crouching position with the knees slightly bent and the back parallel with the floor. The vesicles are then vigorously massaged and the strippings allowed to drop into a tube containing the culture medium. A series of slides is made and then the patient passes his urine into a clear glass. This is later centrifuged and examined for pus and cocci.

The culture tube is incubated for 24 to 48 hours. The slide gently fixed with heat and placed in a solution of equal parts of ether and alcohol, to be stained later by the Gram method. The examination of the unstained slide is done immediately and the addition of a weak solution of acetic acid aids in detecting the pus corpuscles.

The culture media described in my previous paper have been found fairly satisfactory and we have chiefly used the nutrient blood agar in the proportion of one part blood to two parts nutrient agar. The latter is prepared by extracting one pound lean beef by immersion in 500 c.c. cold water for twenty-four hours, and then bringing it to a boil and skimming the surface. Then we add 40 grams of agar, 10 grams sodium chloride and 1 litre of water. Titrate 8-10 of one per cent. to phenolpthalein. The growth of gonococcus outside of the body in even the most carefully prepared media is uncertain because of its low vitality. One or two degrees of temperature above or below 38° Centigrade is sufficient to make the test valueless. It is therefore necessary to have the patient examined near to the thermostat in which the culture tube is to be placed because it cannot be transported from a distance in the varying temperatures which occur in this climate.

Another difficulty is the frequent and rapid growth of other organisms than the gonococci, for it is rare to get a pure uncontaminated culture.

The series here presented consists of 1260 examinations by culture and slide.

To properly understand the importance of the results obtained it is essential to state that nearly all these cases had been treated thoroughly by all modern means before they were subjected to these tests. In acute cases the vesicles were massaged after apparent recovery and the urethra examined, and in the chronic ones where the disease when first seen had existed from six months to eight years they had been treated for months by urethral dilatation and local urethroscopic applications, as well as by thorough and repeated prostatic massage and vesicular stripping, with the usual antiseptic irrigations and instillations. Further, the majority of these cases were private patients of the writer, others were sent by their physician for these tests, and a very small proportion were from the clinic, where they had been subjected to thorough and careful treatment.

Let us see what the examination of these

well watched, carefully treated and apparently cured patients showed. Gonococci were found as follows: By slide alone, 63, or 5%; by culture and slide, 44 positive, or 3½%; by culture alone, 26 positive, or 2%. In other words, from two to five men in every hundred who were clinically well harbored active and dangerous gonococci. It is sad to think of what the effect of marriage upon innocent wives and future children would have been. No patient who has had gonorrhea even in the distant past should neglect the precaution of these careful examinations to protect his health and that of those who will be near and dear to him in future. None of these cases had less than three examinations and we should insist on that number of cultural examinations at least, and more if the slide contains much pus. Some of our positive results were obtained on the first examination, while in others they did not appear till the second or third one.

It is needless to say that every one showing positive results was again subjected to treatment which was continued until we obtained three negative results, and up to the present not one of these men who have been married have had any return of their discharge nor have their wives been infected.

Many interesting results have been obtained from the bacteriological study of these cases as to the other pathogenic organisms which follow the gonococcus and serve to keep up a urethral discharge in some cases, but the limits of this paper do not permit a description of them. With new culture media the more accurate will be our results and the greater our assurance that physicians may do a beneficent work in the community by educating their patients to have these tests made.

10. *The Complement-Fixation Test.* This new and apparently valuable addition to our methods of determining the presence of gonococci or their toxins was first brought into notice by Schwarz and McNeil in an article published in the *Journal of the Medical Sciences* for May, 1911. Prior to that work along this line had been done by Mueller and Oppenheim, but it was not sufficiently conclusive to attract the attention of the scientific world.

This is similar to the Wassermann test for syphilis and follows essentially the same technic. It has been found necessary to use a polyvalent antigen, that is, one made from several strains (usually twelve) of gonococci. By this we determine the presence in the blood of an antibody produced by the gonorrheal organisms in the blood current or in the tissues of some organ, like the prostate, vesicles, or the joints. In an acute case it is not found before four weeks, and apparently remains long after the disease has clinically disappeared. It has been found after all microscopical and cultural tests have proved negative. These facts are most startling and point to the possibility that gonorrhea is not so local a disease as we have supposed it to be.

Not enough evidence has yet been produced for us to say that a positive result shows the presence of living gonococci somewhere in the tissues of the body, nor have we any way of knowing how long the antibodies may persist after cure. This is a most important fact to find out as otherwise we cannot wisely advise those patients whose test has proved positive. The test is exceedingly delicate and can only be done in a well equipped laboratory, and even there strange variations in the results are obtained. A clinically clear case of gonorrhea may show negative results, while one which is well by other and better tests may show positive results. The time has not yet arrived when we can depend upon this test alone and we must therefore place our faith in the tests which are of proven value and which will assure safety to our patients.

These tests which have been described are those which the physician should recommend to his patient, and by so doing he may lessen the peril of latent gonorrhea. He will do more than that for he will awaken in the public mind a realization of the fact that an apparently cured patient is not surely well, but that the consequences of his folly and misfortune may follow him all his life unless he receives competent and skillful treatment from his physician until he is cured, clinically and bacteriologically.

With the treatment of gonorrhea thus placed upon a plane as high as other diseases of far less importance we will hear less silly talk of the physician prolonging a case for financial reasons, we shall see fewer and fewer patients applying to druggists for nostrums promising a quick cure, and we will soon find that men having gonorrhea will aid their physician in their conscientious efforts to rid them of this dangerous malady.

SOME HYGIENIC TESTS APPLIED TO ORTHOPEDIC CONDITIONS.

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AND
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IT IS rather interesting in view of the great dependence placed upon personal hygienic measures in treatment of so many diseases, that so few precise hygienic methods have come into general use, ones that can be employed in recording conditions and changes in normal healthy functions from time to time with exact quantitative degrees of accuracy.

If a mechanic attempts to regulate a complicated piece of machinery, he must know all normal actions of the machine, and the degrees that these actions are influenced by different defects which happen to exist in each instance; and if he does not possess means of measuring

such normal conditions, nor the changes in them in response to his manipulations, probabilities then are strongly in favor of bungling readjustments. And the question has been asked properly why the same probabilities for poor results do not exist when varying degrees of normal human functions are inadequately recognized, and when therapeutic procedures are crudely estimated, or are wholly unmeasured in the treatment of human maladjustments.

The writers have attempted to approach the problem of more accurate hygienic regulations for joint troubles in the following way: The individual heart has a certain functional capacity that depends upon its size, the strength of its muscular walls, the integrity of its valves, and upon other considerations. And by measuring the degrees and variations of blood pressure some quantitative idea can be obtained of the organ's efficiency as it is functionating normally under the special conditions which exist within it. Blood pressures accordingly may be used as rough indicators of normal cardiac functions.

In the lungs the total air capacity may be taken similarly as an approximate gauge of normal pulmonary function regardless of pleural adhesions, diseased areas in the lungs, and so on.

Volumes and specific gravities of urines suggest quantitative amounts of normal work that kidneys are doing at the times the quantities and specific gravities are measured, irrespective of whether casts, albumin, or other evidences of renal disease exist.

Varying degrees of muscular strength are measures of the varying normal functional activity of muscular tissue; and amounts of food, eaten as dictated by the natural appetite, can be taken as very rough quantitative indicators of normal digestive functions if twenty-four-hour quantities of food are weighed before being consumed.

The percentage of haemoglobin in the blood furnishes an idea of the efficiency of the blood with respect to its normal oxygen carrying functions; and also it is possible to judge whether a nervous system is very vigorous or very weak by the hours of sleep taken, when allowances are made for unusual amounts of exercise, worry, *et cetera.*

An individual's weight is a measure of the fluctuating balances which have existed in the past between activities of different organs; while weight fluctuations, from time to time, measure changes continually taking place in the complex physiologic balances among the related organs of every individual.

If all normal functions of all important organs could be measured simply and accurately by clinical methods, we should, have a precise way of stating personal idiosyncrasies and peculiarities that now are designated under vague terms of plethoric tendencies gouty diatheses, nervous temperaments, debilitated and auto-intoxicated states, and others. We would then have definite formulae showing ratios between normal activities of different organs in each individual, as well as absolute degrees of physiologic activity of each organ.

But if one examines a physician's report one usually finds particular emphasis laid upon existing abnormalities and defects without any stated estimation of their probable influence upon healthy relations and functions; although there may be perhaps some vague observations that the individual's general condition seems to be "fairly good" or "rather poor." A lung may be tubercular, however, or a heart may have leaky valves, or a kidney show evidences of nephritis, or a digestive tract exhibit various peculiarities, and the person as a whole may still be active and able to perform his ordinary daily work for a considerable period of time. It should be recognized that these abnormalities are of moment only as they influence present or future normal physiological functions; and the writers wish to emphasize this fact, yet at the same time it is not intended to minimize the other side of the situation, namely, the great importance of knowledge of pathological anatomical peculiarities.

Medical literature of the past shows scanty hygienic data applied to orthopedic cases. Practically none of the older records can be considered complete or adequate in showing quantitative variations which occur from time to time. An attempt has been made therefore in this paper to tabulate in more available form some of the more easily measured normal functions and conditions, arranging them in a way that they can be understood at a glance, and showing variable proportions among different combinations, as well as absolute degrees each measurement exhibits. The relation of each observed condition to the average figures for the same condition among collected large series also is roughly indicated.

Data has been obtained from various sources. From tables of physical measurements made in gymnasia it was found that five feet seven inches and one hundred pounds can be taken as fairly representative figures, respectively, for average heights and weights. Eight hours is commonly considered a fair average for the number of hours of sleep required. Text books have yielded other approximate normal averages as follows:

Average vital lung capacity for an adult, 3700 cc., W. H. Howell, Text-book of Physiology. Average brachial blood pressure in adults (systolic), 110 mm. of mercury, Joseph Erlanger, quoted by W. H. Howell, text-book of Physiology. Average specific gravity of urine, 1.017-1.020. Olaf Hammarsten, text-book of Physiological Chemistry. Average volume of urine in patients treated in United States—1200 cc. for males and 1000 cc. females—C. E. Simon, Manual of Clinical Diagnosis.

Average amount of animal food—10 oz. Av-

UOFM

erage amount of water—50-60 oz. Average amount of vegetable food—30-40 oz.—W. Gilman Thompson, Practical Dietetics. Other average amounts have been assumed less accurately for exercise, muscular strength, nervous reflexes, *et cetera*.

All these have been set down arbitrarily in a table at points marked off upon a straight line. Variations from these averages have been indicated in a convenient way upon perpendicular lines drawn through the straight line of averages, one for each average figure. Each perpendicular has been divided then into a scale to show degrees of variation possible for each separate condition.

Having selected this method of recording results, patients have been weighed, measured, tested with spirometers, blood pressure apparatus, dynamometers, etc.; and from results obtained a curve has been plotted for each individual. Using the table as the pattern for all records, sheets of thin paper have been placed over the table and straight lines drawn upon the blank sheets to coincide exactly with the straight line of averages of the table. Then various numbers obtained from each patient are marked off upon the individual sheets by looking through them to the right places upon the proper perpendiculars of the table. Points thus located then have been joined together into a continuous irregular line as is indicated in the diagrams below.

These irregular curves show easily the variable combinations, the deviations of each variable from the average, and the changes that occur from time to time.

There are many limitations to this graphic method, but before these are discussed a few cases will be cited to illustrate the advantages.

The first chart is that of a woman of thirty years. She was delicate as a girl, and appears now thin, flat-chested, and with poor muscular development. She is engaged at an indoor occupation, sits at her task of proof-reading, and gets outdoor exercise mainly from walking to and from her work.

Several physical examinations in the past have revealed no serious pathological lesions of her organs, and she has been cared for by a number of competent physicians. Fearing that she might become helplessly crippled she sought further advice, and came for treatment before she was seriously incapacitated.

She represents an under-developed woman who has been pushing herself to the limit of her vitality constantly in her daily pursuits. Her main complaints now are chronic dyspepsia, rheumatism, and muscular weakness. A routine physical examination shows no marked abnormality, apart from the poor general development, except obvious atrophy of the small muscles of the hands together with periarticular swellings of finger joints, and gastric symptoms of discomfort, sourness and belching after meals. There has been no history nor evidence of recent infections. Teeth, throat, tonsils, ears, nose, and genito urinary tract are apparently normal. No examination of gastric contents made at the time the hygienic data was tabulated.

The series of hygienic tests and measurements show a curve given in the first chart. This line runs generally below the average and sinks especially low at the points of lung capacity and amounts of fluids taken daily. There is a corresponding small volume of urine of rather high specific gravity. The patient was interested in seeing the graphic record, and could appreciate more readily from it the necessity for increasing if possible her lung capacity, also the desirability of getting more fresh air, and of taking more water. She has been given a few breathing exercises, and she rests an hour in bed in a room with open windows, after work, just before the heavy evening meal. A few tonic medicines and milk of magnesia have helped to relieve gastric symptoms, and by these various therapeutic measures the joint pains have diminished, her appetite improved and her strength has increased. It is not to be expected that a complete cure of such a case can be accomplished quickly after the condition has slowly come on in such a life-long delicate constitution, but the graphic method makes it possible to show to patient and physician clearly in a general way what needs to be done and what is being accomplished. In the past, in this particular instance, lack of such a method has been responsible apparently for the overlooking of the quantitative physiological defects which have been producing the anatomical abnormalities in the joints.

The second chart is of a healthy woman who is a sister of the first patient. The curve is different particularly because of the higher levels for body weight and amounts of fluids taken; but it shows a lung capacity of rather low degree like the patient.

The third record is one of a patient suffering with chronic gonorrheal arthritis. A general physical examination showed nothing very remarkable except the urethral infection. In the past the patient derived much temporary benefit from a course of baths at Hot Springs, Arkansas. After returning home, however, he was unable to take care of himself and the joint symptoms came back again. Then a trial of gonorrheal vaccines was made.

Vaccines, which were continued for a long period, produced slight relief at first, but later they wore the patient out so that he was worse than when he began this treatment. He also tried various rheumatic remedies.

When first seen by the writers he presented the condition so often seen in chronic patients, namely, the effects of too much and too varied therapeutic measures. After seven or eight months' rest from all stimulating or depleting procedures, and with observance of a few hygienic regulations, joint swellings and pains have

subsided greatly, muscular strength has partially returned, seven or eight pounds have been gained in weight and a secondary anemia has disappeared.

The curve which is shown was taken at this later period, and it does not demonstrate such striking deviations as that of the first patient. This single record, by itself, is of value mainly in revealing the absence of striking abnormalities. But if a record had been taken eight months ago, it would differ sufficiently from the present one to point out tendencies of the change taking place in favorable directions. Here again the value of greater precision and greater clearness of graphic representation of clinical data is obvious.

The fourth record is one of a healthy man who does little muscular work, and who leads an ordinary sedentary life. The curve in this case runs more frequently above the base line, and its general level is higher. The fifth chart is that of his wife, who has well-defined rational ideas about personal hygiene, and who is frequently engaged in showing others how to take care of themselves. In spite of all precautions, she slowly succumbed to a very obscure metabolic type of joint disease. Physical examinations have revealed nothing definitely abnormal, and now it is considered that she represents a type of disturbance analogous to gout. There may be in her case a backing up in circulation of some unrecognized substance, perhaps creatinin in too large amounts, and this normal product of metabolism may be producing pathological changes in the joints because of excessive amounts in the blood, similarly as excessive amounts of circulating urates produce pathological anatomical changes in gouty patients.

The sixth chart shows another infectious arthritic case originally of gonorrheal origin. Specific blood tests now are negative in reaction, and apparently the patient simply is in a run-down state. He has lost greatly in weight, and arthritic involvements are extending to new parts.

He has a history of having lived very well, has eaten heartily, worked hard, and has used some alcoholic stimulants. He exhausted himself finally and then tried unsuccessfully to restore his depleted vitality with bath and tonic treatments. At the time the hygienic data were taken he could barely walk with crutches, and ankle and knee joints were swollen and sore.

The curve is valuable in showing an individual generally below the average and without any marked abnormalities. The line rises above the base line only at two related points. He has been drinking water freely so that the amount of daily fluids taken and the volume of urine are above the line of averages. The urine represents the clear pale type of low specific gravity in latent chronic interstitial nephritis.

Such a chart helps to explain why there is so little chance of any single remedy, new or old, being found that will fit all different needs of the situation. It is difficult to conceive of any single drug or therapeutic measure being discovered, that will produce readjustments in all deviating factors correctly and in exactly right degrees in each to restore the most healthy complex proportions among them all. The only imaginable way that success can be attained in such a generally depleted condition is by means of a number of therapeutic procedures, each prescribed in individual ways with definite observations upon their separate effects. A graphic chart permits these combinations and slight variations to be estimated in the best manner.

DISCUSSION OF SOME OF THE ADVANTAGES AND LIMITATIONS OF THE METHOD.

The six illustrations that have been given hint at some advantages of the method, *e.g.* that patients' interests are aroused and sustained better; that greater precision and more completeness in estimation of patients' conditions become possible, and that therefore greater success in treatment results.

Many persons will see the defects of the scheme and some possibly will condemn the whole of it because there are many faults. For the latter an explanation is necessary,—that defects, although great, are less than those which are associated with total absence of hygienic data, as quite commonly is the case now with orthopedic patients. The method has not the accuracy of comprehensive physiologic experiments conducted in institutions, for example, like the Carnegie Nutrition Laboratory in Boston; and it is intended to be intermediate only between such careful scientific labors and the neglect, due to lack of time, shown frequently now among busy practitioners.

Criticisms can be advanced that the list of measurements is very incomplete, and that it does not include many important physiological functions. This is true, and if the number of individual tests was extended the curves would possess much more significance. As previously suggested, it would be advantageous to have all normal functions represented; but the element of ease has to be reckoned with, and the writers have selected only a few representative tests, that take but a few minutes of a physician's time. It may seem advisable perhaps in the future to add others, such as blood cell counts, ages, etc.; yet as now presented the records harmonize well in the degrees of reliability, which individual tests have shown and the significance which they possess in combination.

An objection may be raised that amounts of food vary greatly from day to day with varying appetites. However, experimentally it has been found that, rough as these measurements are, they are more precise than statements of patients. One individual may claim to have an unusually good appetite and to eat a large amount, and upon weighing the food it has been discovered occasionally that the reverse condi-

tion of affairs exists. Again another person says the appetite is poor and yet not infrequently the consumption of food actually is found to be excessive. These results of food weighings should be interpreted only to point out gross tendencies, and further weighings should be made to determine the lesser degrees and changes.

It is to be noted that work of weighing the food is relegated to patients themselves. Each is provided with a pair of scales with directions for weighing and eating each kind of food separately, and practically it has been found that the task arouses patients' interests, while simultaneously relieving the physician.

Regarding the accuracy of averages, it should be explained that only great deviations are to be considered significant in interpretation of results, so that these average figures do not have to be accurate to be useful. They depend upon so many elements that they can be only very roughly approximate; for example, body weights depend upon age, sex, occupation, etc., and vary within wide limits.

These figures, nevertheless, serve as a convenient *fixed base line* for comparisons. The two tests for muscular strength, *e.g.* the strengths of the forearm muscles and of pectoral muscles, are very incomplete, yet are better than descriptions of "poor," "ordinary," and "good," as these adjectives are used often in reference to muscular development. Moreover, patients find it interesting to watch the changes from time to time in degrees of muscular weaknesses of which they complain.

Averages do not have much significance for these particular tests unless many corrections are applied, and they are of use mainly as fixed points upon the base line of the table. This fact is made more clear by a statement of D. A. Sargent, director of the Hemenway Gymnasium at Harvard University, who has very kindly informed the writers that he has found that the average strength of forearm for the male is 55 kilos and for the female 25 kilos, while the average strength of chest for the male is 65 kilos and for the female 30 kilos.

No records are given in the article with repeated observations upon the same patient over extended periods. Single charts, however, differ greatly from each other and help to show the peculiarities which each patient exhibits. This fact justifies an early paper explaining the method.

It does not seem appropriate to discuss further the significance of hygienic measures in their relation to orthopedics, because everyone understands that personal hygienic regulations mean vascular regulations, and that the latter are matters of extremely great importance in restoration of health of all tissues including bones and joints.

Orthopedics, as it is understood at present, deals at times with surgery, mechanical supports, corrective apparatus and internal medical measures in treatment of joint diseases, deformities and various anatomical weaknesses.

In progress it is recognized by every one that orthopedists must continually study their problems carefully in order not to lay too much or too little emphasis upon any one of the related, important phases of their specialty. Care has to be taken not to stretch surgical methods to limits beyond which they are more harmful than useful, nor to use them too exclusively. There has to be avoidance of the error of ascribing all benefits observed to them, or to mechanical supports when the latter are matters of greatest interest; for there always are existent less easily recognizable, and perhaps even more important, vascular peculiarities; vascular states can be regulated properly only through attention to personal hygiene.

It can be said with truth, that surgery and mechanical therapeutic devices are simply aids, that are needed only occasionally to help personal hygienic regulations restore the health. The facts are, that sometimes surgery is indispensible, and at other times artificial supports are absolutely necessary, while vascular and hygienic conditions must always be compatible with health or otherwise the other measure will fail.

CHART I

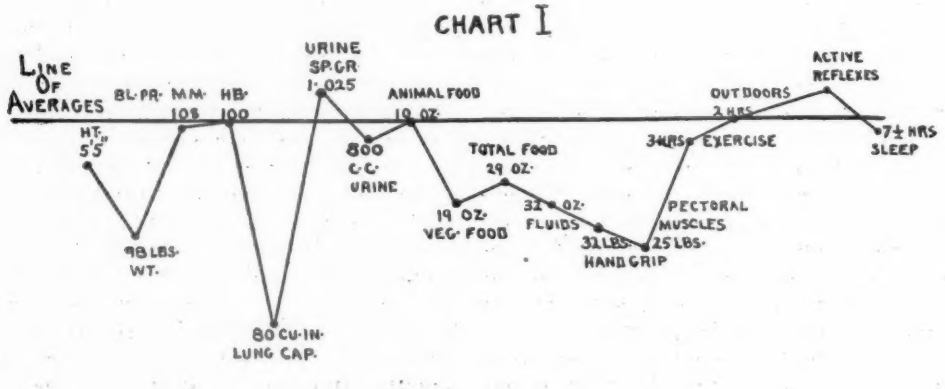


CHART 2

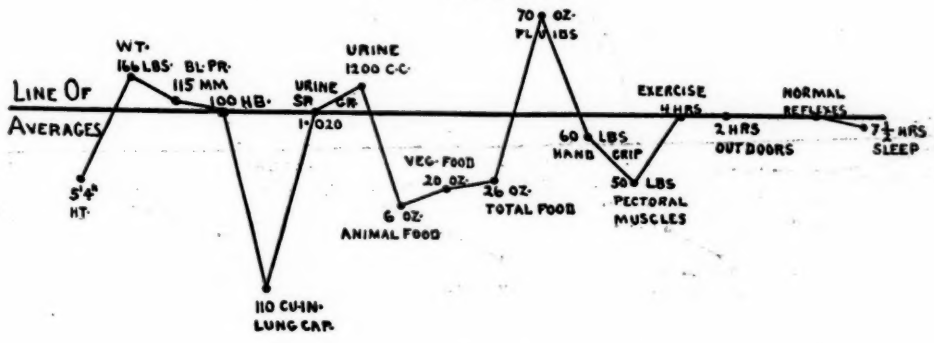


CHART 3

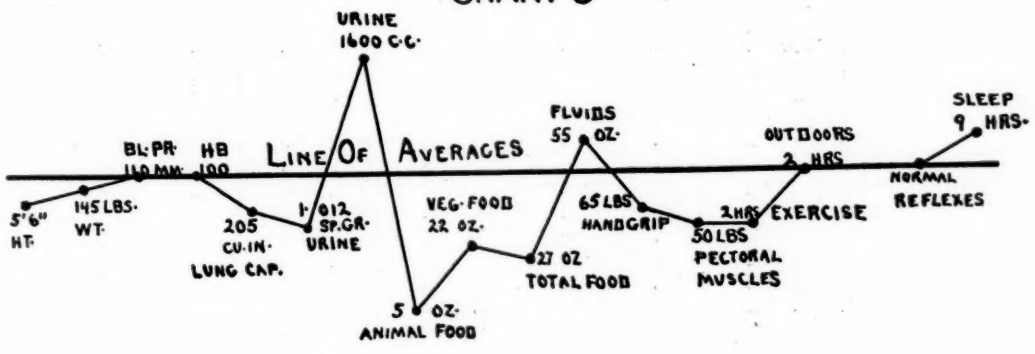


CHART 4

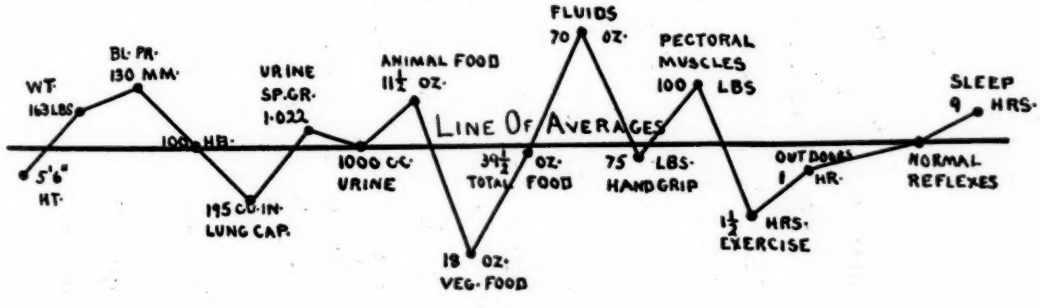


CHART 5

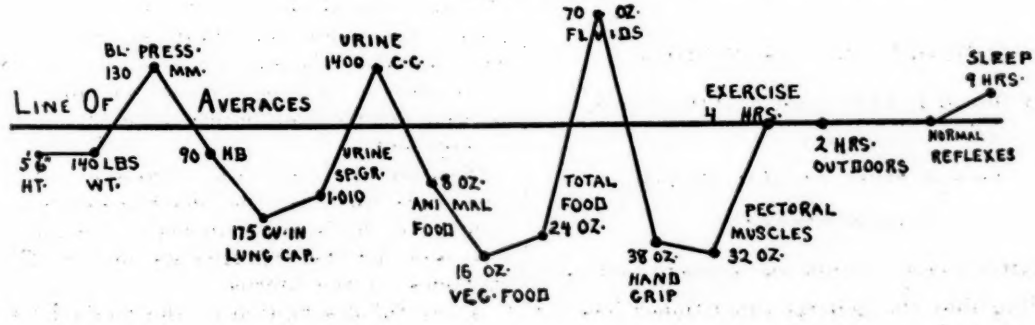
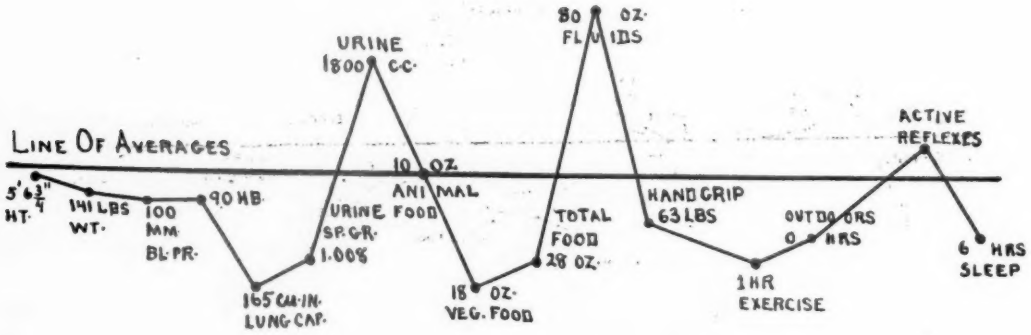


CHART 6



FEET	INCHES	POUNDS	M.M. Hg.	MAX.	CUBIC INCHES	Sp. Gr.	C.C.	OUNCES	OUNCES	OUNCES	OUNCES	POUNDS	POUNDS	MAX.	HOURS	DEGREES OF ACTIVITY	HOURS
		290	250		435		3800					220	220		17		
		80	40		20		3600					210	210		16		
		70	30		405		3400					200	200		15		
6-	6	60	20		90		3200					190	190		14		
	5	50	10		75		3000	20	60	80	100	180	180		13		
	4	40	200		60		2800	19	57	76	95	170	170		12		
	3	30	90		45		2600	18	54	72	90	160	160		11		
	2	20	80		30	1048	2400	17	51	68	85	150	150		10		
	1	10	70		15	44	2200	16	48	64	80	140	140		9		
6-	0	200	60		300	40	2000	15	45	60	75	130	130		8		14
	11	90	50		85	36	1800	14	42	56	70	120	120	8	7		13
	10	80	40		70	32	1600	13	39	52	65	110	110	7	6		12
	9	70	30		55	28	1400	12	36	48	60	100	100	6	5	VERY	11
	8	60	20	110	40	24	1200	11	33	44	55	90	90	5	4	ACTIVE	10
AVERAGES	5-7	150	110	100	225	1.020	1000	10	30	40	50	80	80	4	3	ACTIVE	9
	6	140	100	90	210	16	800	9	27	36	45	70	70	3	2	NORMAL	8
	5	30	90	80	195	12	600	8	24	32	40	60	60	2	1	SLUGGISH	7
	4	20	80	70	80	08	400	7	21	28	35	50	50	1	0	VERY	6
	3	10	70	60	65	04	200	6	18	24	30	40	40	0		SLUGGISH	5
	2	100	60	50	50	1000	0	5	15	20	25	30	30				4
	1	90	50	40	35			4	12	16	20	20	20				3
5-	0	80	40	30	20			3	9	12	15	10	10				2
	11	70	30		105			2	6	8	10	0	0				
	10	60			90			1	3	4	5						
	9	50			75			0	0	0	0						
4-	8	40			60												
					45												
					30												
HEIGHT		WEIGHT	BLOOD PRESSURE	HAEMOGLOBIN	LUNG CAPACITY	SPECIFIC GRAVITY URINE	VOLUME URINE	ANIMAL FOOD	VEGETABLE FOOD	TOTAL FOOD	LIQUIDS	STRENGTH OF FORE ARM MUSCLES	STRENGTH OF PECTORAL MUSCLES	AMOUNT OF DAILY EXERCISE	HOURS SPENT OUT OF DOORS	NERVE REFLEXES	HOURS OF SLEEP

TABLE I

Medical Progress.

REPORT ON OBSTETRICS.

By Robert L. DeNormandie, M.D., Boston,

and

John B. Swift, Jr., M.D., Boston.

(*Concluded from page 729.*)

PHARMACOLOGIC ACTION OF ECBOLIC DRUGS.

Feeling that the general practitioner has not been able to keep in touch with the recent advancement in the chemistry and pharmacology of the ecbolic drugs, Lieb[7] has reviewed briefly the more important papers, and gives the results of his own experiments on the use of oxytocics in the circulation and on the isolated uterus, and indicates their therapeutic employment.

Dogs anesthetized with morphine and chloretone were used for the blood pressure experiments and the isolated uterus of the guinea-pig was used for the experiments on the effects of oxytocics on the uterus.

A careful description of the method used accompanied the article, including some excellent

drawings and some of the blood pressure tracings.

Ergotoxine, isolated from ergot first by Tanret and later by Kraft, Barger and Carr, injected intravenously into a dog in doses of 1 mg. per kilo, causes almost immediately a pronounced rise in blood pressure with a considerable slowing and weakening of the heart. The rise occurs in a cat whose brain and spinal cord have been destroyed. It is, therefore, independent of the central nervous system and must be of peripheral origin.

Barger and Dale conclude that ergotoxine first stimulates and then paralyzes motor myoneural junctions and that this action is limited to those nerve endings which are connected with the true sympathetic system.

Therapeutically an isolated guinea pig's uterus treated with ergotoxine shows an increase in the rate and strength of contractions.

Ergotoxine used during labor has not been satisfactory. The pains are much more intense but much less persistent.

These therapeutic experiments suggest that ergotoxine does not represent the full action of ergot. Furthermore, the rise in blood pressure which follows the injection of an ergot preparation is much greater than can be explained by the ergotoxine present in the preparation. This blood pressure rise is due to several amines, the most important of which is para-hydroxyphenylethylamine. This causes a sharp rise in the blood pressure due to vasoconstriction. On the isolated uterus it may cause an increase in the rate of contractions or in addition a more complete contraction and a distinct increase in the tonus. Used therapeutically it seems to show a sharp but very transitory rise in the blood pressure, especially in patients in collapse when the rise in blood pressure was very short. It seems to have no effect on the frequency or strength of the contractions of the parturient uterus.

Ergotoxine and para-hydroxyphenylethylamine account for the effect of ergot preparations on blood pressure but do not explain the striking action on the uterus. This is believed to be due to beta-imidoazolyethylamine. This substance produces an immediate and prolonged fall in the blood pressure associated with peripheral vasodilatation. On the isolated uterus in concentration of a 1:600,000, it produces a marked contraction with cessation of rhythm in maximal tonus. Used during labor, doses of 1 to 2 mg. led to respiratory disturbances and convulsions with only a slight stimulation of the uterus.

The action of Galenical preparations of ergot may be explained as follows: The initial fall in pressure which often occurs after their intravenous injection is due chiefly to the beta-imidoazolythylamine, partly to the isoamylamine; the marked and prolonged rise is due almost entirely to the para-hydroxyphenylethylamine and only in small part to the ergotoxine. The action on the vaso-motor nerve cells and the bluing of the cock's comb are due solely to ergotoxine. The action on the uterus is referable to the ergotoxines, the para-hydroxyphenylethylamine, but essentially to the beta-imidoazolythylamine. There are also many other substances present, some of which are depressant, others inactive; chemical standardization of so complex a drug is out of the question. A well known English firm has put upon the market a preparation which is of constant composition. It consists of a certain amount of ergotoxine, obtained from ergot, to which are added definite quantities of synthetic para-hydroxyphenylethylamine and beta imidoazolythylamine.

Pituitary Extract. The intravenous injection of an extract of the posterior lobe of the pituitary gland is followed by a rise in blood pressure and a slowing and weakening of the heart. The slowing and weakening of the heart is due to direct stimulation of the vagus center. The rise in blood pressure is due to vasoconstriction, the drug acting directly on the muscular coats of the vessels. Diuresis is secondary to the rise in the blood pressure but a second dose does not increase the blood pressure but does increase the diuresis, so there must be some substance in the extract which directly stimulates the kidney cells.

On the isolated uterus pituitary extract 1:600 causes very complete contractions and then tetanus, broken by incomplete relaxations. Injected into pregnant animals, it produces abortions. Injected into a lactating animal a prompt secretion of milk follows probably due to stimulation of the smooth muscle of the breast, as the total quantity of milk secreted in twenty-four hours is not increased.

The active principle of pituitary extract has not been identified. Experiments would indicate that its action on the uterus is due to a substance closely resembling or identical with beta-imidoazolythylamine. Pituitary extract may be applied locally to stop oozing hemorrhages or to reduce congestion of mucous membranes. It is chiefly indicated in uterine inertia. It is said to be more valuable than ergot in post-partum hemorrhage and subinvolution. The chief dangers associated with its use are uterine tetanus and rupture, and fetal asphyxiation and impaction. It is contraindicated in cardiac disease or arterio-sclerosis when an abrupt rise in blood pressure would be dangerous.

It is readily destroyed by the alimentary ferments, hence it must be used subcutaneously or intramuscularly when stimulation of the uterus, kidney, and bowel result. Injected intravenously, it produces a prompt but transitory rise in blood pressure, slowing of the heart, diuresis and uterine stimulation.

Quinine. On the isolated uterus quinine

1:100,000 caused an immediate increase in the rate and strength of the contractions, with the tonus moderately improved, an increase of the concentration to 1:25,000, threw the uterus into spasm, which later showed signs of poisoning and then death. To induce labor quinine is administered in doses of from 0.5 to 1 gram. Maurer believed that in 87% of his cases he could ascribe to quinine a pronounced ecbolic effect within forty minutes of the first dose. Failures are probably due to either lack of absorption or to depression of the uterus from excessive doses.

Iso-quinolines. This group is composed of hydrastine, narcotine and landanosine, alkaloids having a strychnine-like action on the spinal cord.

Hydrastine is the least toxic of this group. In the author's experiments hydrastine produced a marked and prolonged fall in blood pressure without preceding rise. On the isolated uterus, solutions of 1:50,000 produces a temporary cessation of rhythm in maximum tonus soon broken by comparatively large relaxation. More concentrated solution after momentary tetanus causes death of the uterus in extreme relaxation.

Hydrastinine is less toxic than hydrastis with the same pharmacologic action.

Cotarnine, marketed under the name of stypticin or styptol is derived from narcotine.

Intravenously in doses of 5 mg. per kilo there is a momentary fall in blood pressure followed by a slight rise. The heart rate is unchanged. On the isolated uterus, there is an increase in the rate of contraction and in tonus.

Therapeutically the drugs can be employed in menorrhagia and metrorrhagia, though it has been suggested that they might be of value in post-partum hemorrhage. The drugs stimulate the uterine muscles directly, the organ contracts as a whole, the lumen of the intramural vessels is obliterated and the bleeding stops.

Viburnum. Small amounts of the fluid extract of viburnum caused a considerable increase in the rate and an improvement in the tonus of the isolated uterus.

Sodium valerianate failed to produce any stimulation on the uterus and in high concentration proved distinctly toxic. Its sedative action cannot be due, therefore, to its action on the uterus. Presumably it quiets the irritable central nervous system and the uterus is affected secondarily. Apparently its use is purely empiric.

His conclusions are as follows:

1. Ergot owes its pharmacologic action to several constituents; of these, ergotoxine alone is specific. Beta-imidoazolythylamine, para-hydroxyphenylethylamine and the other sympathonimetic amines are products of the putrefaction which occurs during the manufacture of the Galenical preparations. Each constituent has a distinct pharmacologic action; stimulation of the uterus is characteristic of them all. In obstetrics at least no single active principle can replace active preparations of whole ergot.

2. Extracts of the posterior lobe of the pituitary gland stimulate all smooth muscle. It has been suggested that the active constituent of the infundibulum is the hormone which initiates normal labor. The extract of the pituitary is the most reliable ecbolic which the obstetrician has at his command. Its promiscuous employment during labor cannot be too strongly condemned.

3. Because of the stimulating action of quinine on the isolated uterus it may be employed to induce or strengthen labor pains.

4. The improvement that follows the use of iso-quinolines in menorrhagia and metrorrhagia is due not to changes in the circulation or in coagulation time, but to a direct action on the uterus.

5. Fluid extract of viburnum stimulates the isolated uterus. Its action in dysmenorrhoea is therefore not due to an effect upon the uterus, but to a depression of the central nervous system.

PUBIOTOMY VERSUS CAESAREAN SECTION IN INFECTED CASES.

Rongy points out that a great deal of the work of the consulting obstetrician is in those cases where there is dystocia, due to disproportion of the size of the fetal head and the pelvis, in which attempt has been made at delivery by the general practitioner, and in which asepsis and antisepsis has not been scrupulously observed.

There are three methods of delivery at our command. First, high forceps; second, Caesarean section; third, pubiotomy. He believes that high forceps in the light of our present surgical knowledge is hardly justifiable, especially in primiparae. The effect on the mother is bad. Most of the plastic operations are a result of badly managed forceps cases. It is the only procedure in surgery where an attempt is made to pull a mass through an opening too small to admit of its easy passage without first enlarging the opening, or making the mass smaller. Its effect on the child is too well known to need discussion. Accordingly, we are left with either pubiotomy or Caesarean section.

Here Rongy distinctly states that he is not attempting to place pubiotomy in competition with Caesarean section. Pubiotomy he regards as an operation of emergency and not of election. He believes that pubiotomy is the only operation in border-lines cases that have been mismanaged or misjudged. It adds but little additional risk to the mother. The head should be somewhat engaged and forceps should have

been attempted and if then the child is alive, pubiotomy should be performed. He has followed the technic of Döderlein and he reports in detail nine cases in which he has done the operation. He feels that the operation should not be attempted except by a carefully trained gynecological surgeon as the injuries to the soft parts, the bladder and the urethra may be quite extensive. The sacro-iliac joint may be injured and if this possibility is not born in mind, permanent disability may result. Hemorrhage may be profuse. Communicating vaginal tears may take place. However, in cases that have been misjudged and neglected, with the child still viable, it is the only method of procedure, and only an experienced obstetrician should undertake its performance.

His conclusions are as follows:

1. A close study of statistics of Cesarean section of various operators compel us to assume that cases which are brought into the hospital with a history of a long and tedious labor, who were frequently examined or where delivery by forceps has been attempted, are supposedly infected and therefore abdominal section should not be the operation of choice.

2. In such cases pubiotomy becomes the operation of necessity, for it adds very little danger to the mother and it saves the child.

3. Pubiotomy is not an operation of election.

4. Cesarean section and pubiotomy never compete. In cases when Cesarean section is indicated, pubiotomy is contraindicated and vice versa.

THE TREATMENT OF THE TOXEMIA OF PREGNANCY WITH THE SERUM OF NORMAL PREGNANT WOMEN.

After suggesting the possibility of the use of serum obtained from normal pregnant women for the treatment of toxemias of pregnancy, the author[9] states that he has recently been injecting the serum intradurally rather than intravenously in cases of eclampsia. He was led to do this by the picture of severe poisoning of the central nervous system which the eclampsia presented. He has also tried the serum in cases of puerperal sepsis since many puerperae have hemolytic streptococci in their lochia without themselves being sick. One can assume that theoretically their serum is the same as that of convalescents. Three of his septic cases treated with injection of serum showed that this treatment had a bearing on the result.

PUERPERAL INFECTION.

Watkins'[10] paper is a summary of his experiences of one hundred cases of puerperal infection covering a period of eight years since operative interference was given up by him. Of these cases ninety-one recovered and nine died. Watkins feels that the attempt to classify puerperal infections complicates the study of the disease and the classification is of scientific interest but not of practical value.

The disease is essentially systemic and has ceased to be a local one when fever is present. He feels that the bacteriologic examination of vaginal and uterine secretions is of relatively small value as the results are often uncertain and misleading. The clinical findings usually determine the diagnosis, and if one relies entirely on the laboratory diagnoses by the examinations of the secretions the danger of making the wrong diagnosis is great.

Watkins says the important part of the treatment of puerperal infection is the use of remedies to increase the body resistance and the abandonment of measures that interfere with the development of immunizing substances. Food, sleep and good elimination are essential. The outdoor treatment is the most valuable remedy known in the treatment of puerperal infection. To promote elimination two quarts of fluid is the minimum amount given. Stimulants are not used. Anodynes and hypnotics are given in moderation to relieve pain and to procure at least six hours of sleep. An ice bag is kept over the lower part of the abdomen and the head of the bed is elevated to promote drainage. He says vaginal and intrauterine douches and medicinal applications are harmful, meddlesome and useless procedures. Retained products of conception should be left to escape spontaneously except in cases of hemorrhage, when gauze packing should be used to hasten separation of retained tissue. Pelvic exudates usually disappear entirely by absorption; only the exceptional case requires incision and drainage. Suspected cases of free pus in the abdominal cavity Watkins believes should have an exploratory vaginal section to determine the diagnosis and the indications for treatment.

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For a review of the recent literature on the sero-diagnosis of pregnancy, the reader is referred to the article by A. K. Paine, M.D., appearing in the BOSTON MED. AND SURG. JOUR., February 26, 1914.

Reports of Societies.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.

MEETING OF FEBRUARY 19, 1914, AT THE BOSTON MEDICAL LIBRARY.

D. H. FULLER, M.D., Secretary.

DR. J. W. COURTNEY read a paper entitled,

ON TERRITORIAL AUTONOMY IN CEREBRAL CIRCULATION AND ITS RÔLE IN THE GENESIS OF SYMPTOMS IN THE PSYCHONEUROSES.*

DISCUSSION.

DR. G. L. WALTON: It may at least be claimed for this theory that no more satisfactory one is at present forthcoming. As the reader has said, the expressions, "dissociation of personality," and the like, do not really go far towards explaining the symptoms under consideration. Again, when I presented the subject at the American Neurological Association in the paper to which Dr. Courtney refers in courteously crediting me with advancing the vasomotor theory, a favorite recourse of the disputants seemed to be the word "dynamic," as explaining the cerebral changes in hysterical monoplegia. This explanation also is vague and unsatisfactory, and presents nothing of which we have a recognized analogue in other parts of the body. There is a certain fascination in the proposition that separation of neurones may explain these transitory disabilities, but this is another purely theoretical proposition and on the whole less satisfactory than the vasomotor theory. It may fairly be assumed that: (1) Psychic processes are capable of producing mechanical changes in the organism. (2) The best recognized of these mechanical changes are vasomotor changes, of which need only be cited the pallor of fear and the blush of shame. (3) Such vascular changes certainly do occur at the periphery in hysteria, offering a visible analogue of the cerebral changes suggested in this theory. (4) The vascular changes in the periphery are hardly capable of explaining the symptoms under consideration, for hysterical anesthesia indicates not a simple loss of sensation, such as appears when the foot falls asleep, but involves a false interpretation which means cerebral disorder.

Dr. Courtney has added to the weight of the theory by citing recent advances in cerebral vasomotor control. At the time I presented the subject in 1884 it was assumed in my postulate that such vasomotor control existed, though there was at that time no tangible evidence to verify the supposition.

DR. A. MYERSON: Dr. Courtney's paper divides itself easily into two parts, one as to whether or not there are autonomic vasomotor centers in the brain, and secondly, whether vasomotor disturbances of a territorial kind are the cause of hysterical phenomena. For the first question, I think the answer is as Dr. Courtney has indicated, "Yes, there are such centers." Both by the experiments he has quoted, by analogy and by inference, we have a right to assume the existence of territorial regulation of the blood supply of any part of the brain. For the second question, the answer is not quite so certain. Dr. Courtney's explanation is simple, but it is almost too simple. Associated with the explanation are such obstacles as seem to me to be insuperable.

First of all, the mere fact that in the paralyzed limb of a hysteric, there is pallor and evidence of vasomotor disturbances, as well as paralysis, shows nothing concerning the origin of paralysis and its relationship to vasomotor disturbances. In the paralyzed limb of a patient suffering from anterior poliomyelitis, there are vasomotor disturbances, but no one assumes that the vasomotor disturbances have caused the paralysis. It is well understood that they are coincident and have a separate injury for their origin, a mechanism which is impaired at the same time that the motor cells are injured. So in hysteria, it may well be that the vasomotor symptoms are mere accompaniments and stand in no causative relationship to the other symptoms.

Secondly, if a cerebral spasm and anemia is responsible for paralysis in hysteria, that spasm lasts as many years, for example, as the paralysis, and then it is inconceivable to me that no permanent damage is done, that recovery can be complete and quick. Any part anemic for years, especially nerve cells, must be permanently damaged no matter what the cause of the spasm, and the limb which such cells innervate, would suffer correspondingly. The transiency, changeability of symptoms in hysteria makes the vasomotor explanation plausible until one looks deeper and then inadequacy appears.

Third, if vasomotor spasm or injury be responsible for symptoms, how does it then happen that the paralysis of hysteria practically never follows the known physiologic innervations, that it never corresponds to the cortical innervation, or peripheral nerve distribution, or the segmental arrangement, as in the spinal cord? It corresponds to an idea, the well-known glove paralysis or anesthesia. It includes surfaces not influenced in organic diseases. It is not accompanied by changes in the reflexes, such as organic diseases involving known territories bring about. In other words, it has no known relationship to territories as we now understand those territories. While the future may bring us knowledge of territorial innervation which we do not now possess, present-day theories cannot base themselves upon the future. Finally, as a pathologist, I sincerely seek physical explanation of mental phenomena. Vasomotor disturbance as a cause for hysterical symptoms appeals, but as I said at the commencement, its defects as an explanation are too apparent for my acceptance.

DR. C. K. RUSSELL: Regarding the characteristic distribution of the loss of sensibility in hysterics, namely, that which has been descriptively termed stocking or glove anesthesia, it may be of interest to refer to two patients who came under my observation when an interne at Queen's Square, in order to show that this distribution may not be merely due to the patient's conception of segmentation in the limbs. The first case I had the privilege of observing with Dr. Gordon Holmes; the second was under my own charge, and was very similar to the first. Both were cases of Jacksonian epilepsy, with the convulsions beginning in the left hand and face. Following the convulsion, in which there was little or no loss of consciousness, I noticed that besides the motor weakness of the affected side, there was a distinct loss of sensibility to pin prick

* See page 745.

extending over the half of the body and the corresponding limbs, a hemianalgesia. The recovery from this loss of sensibility was peculiar in that it began to be recovered from on the body, starting from the outside and progressing towards the midline in concentric circles. About the same time as it began to recover on the trunk, recovery was also noticed on the foot and at the shoulder, and progressed up the leg and at the same time down the arm, the hand from the wrist taking a relatively longer time to recover its sensibility. Observations following several attacks all corresponded in showing the same method of recovery of sensibility.

The results of brain disturbance which produce the march of a Jacksonian fit evidently, I imagine, are recovered from in a similar manner to that in which they are affected, viz., in receding concentric circles.

NEW ENGLAND PEDIATRIC SOCIETY.

The twenty-ninth annual meeting was held in the Boston Medical Library, Jan. 23, 1914. C. A. Pratt, M.D., President; Fritz B. Talbot, M.D. Secretary.

Dr. Charles G. Mixter read a paper entitled

A CASE OF LYMPH CYST OF THE MESENTERY.*

DISCUSSION.

Dr. J. L. Morse: I would like to speak of just one case which was on my service at the Children's Hospital, I think two years ago, which gave all the physical signs of a cyst of the mesentery, and which was, for all practical purposes, a cyst of the mesentery. It occurred in a small boy whom we had seen a year previously with tuberculosis of the mesenteric glands. In the course of the year these had broken down and he had a cold abscess about the size of an egg-plant which gave all physical signs of a cyst. Dr. J. S. Stone operated and removed it *en masse*, with good recovery.

Dr. Maynard Ladd read a paper entitled,

THE INFLUENCE OF ALKALIES ON THE GASTRIC MOTILITY IN INFANTS.**

The paper was illustrated by lantern slides of serial radiographs. Three infants were studied. Lime water in proportions of 25 and 50% of the total mixture, and bicarbonate of soda and citrate of soda, 2 grains to two ounces of the feeding, were given. The presence of lime water appeared to hasten the emptying time of the stomach by from one to two hours, if the casein was in the form in which it naturally occurs in milk. On the contrary, when the casein had been previously precipitated the addition of lime water had no material effect upon the gastric motility. Sodium bicarbonate had much the same effect as the lime water. Sodium citrate showed the least effect upon motility; its action was not at all marked. The rate at which the stomach emptied itself in the first two hours of digestion was only slightly accelerated, both with the lime water and the bicarbonate of soda, the effects of the alkalies being exerted chiefly in the latter part of the digestive period, probably due to their action in breaking up the casein curd so that the gastric protein digestion could proceed under the same favorable conditions provided in the case of precipitated casein mixtures.

DISCUSSION.

Dr. J. L. Morse: It is a pity to let such good work as this go by without saying something about it. I do not know whether all the gentlemen here realize how much confusion and uncertainty there is about the action of alkalies on the digestion of casein and the emptying of the stomach. If they did, they would appreciate better how important this work is and how much it may help us. Dr. Ladd has called attention to another important point and that is the question of the net energy value of the protein in relation to the time required for its digestion. As far as I know, no one has ever spoken of this point before, although Chapin of New York has called attention to the difference in the net energy value of the sugars, that of malt sugar being greater than that of milk sugar and cane sugar. Another point which he has brought out is the action of fat on the emptying time of the stomach. These results are rather surprising, as they are noticeably different from what we have learned as to the action of fat on digestion in adults.

Dr. John Lovett Morse read a paper entitled,

INFANTILE SCORBUTUS.

There has been both an absolute and relative increase in the number of cases of scurvy coming to the medical out-patient department of the Children's Hospital during the last few years. The per cent. of cases of scurvy to the total number of new cases during the last ten years is as follows: 0.11, 0.43, 0.17, 0.33, 0.24, 0.24, 0.47, 0.61, 0.67, 0.87. Analysis of the cases showed that 20% were fed on condensed milk or proprietary foods mixed with water. The milk was heated in at least 81% of the cases in which it was used either with or without proprietary foods. It would seem from these figures that proprietary foods, "stale" foods, or the heating of milk to the temperature of pasteurization or higher, may all play a part in the etiology of scurvy. The proportion of babies fed on the proprietary foods in 1913 was much smaller than in 1905. Boiling of the milk was much more common in 1913 than in 1905. Further analysis of the cases showed that the percentage of pasteurized milk used in Boston has increased very rapidly during the last six years coincident with the increase in the number of cases of scurvy. The figures are as follows:

Year.	Percent. of Cases.	Percent. of Pasteurized Milk.
1908	0.24	33.58
1909	0.24	30.68
1910	0.47	63.50
1911	0.61	73.02
1912	0.67	70.59
1913	0.87	80.00

* This paper was published in the Journal of April 2, 1914, p. 536.

** Published in the Journal of April 2, 1914, p. 518.

This, of course, suggests, but does not prove, some relation between the pasteurization of milk and the increase of cases of scurvy.

Analysis of the symptomatology of the cases showed that crying on handling was the first symptom noted in 69 cases, and paresis in 11. Tenderness of the legs and crying on being handled was found in every case, swelling in 25, paresis in 23, rigidity in 15 and inflammation of the gums in 37. The errors in diagnosis were numerous, which shows that in spite of all that has been written and said about infantile scorbutus during the past fifteen years, many physicians are still unfamiliar with the disease or unable to recognize it.

DISCUSSION.

DR. MAYNARD LADD: A good many children are practically getting a pasteurized or a boiled milk when, according to the history given by the mother, they are being fed on raw milk. I have seen three or four perfectly definite instances where, according to the mother's statements, the children were taking raw milk, and yet the children unquestionably had scurvy. Going into the cases farther, I have found that it was the custom of the mothers to take the bottle of milk, put it in boiling water, then prepare the child for the feeding, change the diapers tuck it up carefully, and then take the milk from the boiling water and cool it down to the proper temperature. That is a way of boiling milk, or pasteurizing it, which we do not ordinarily appreciate, and which I believe accounts for many cases of scurvy in babies who are fed supposedly on raw milk. Personally I believe that long-continued use of a milk pasteurized at a high temperature, or boiled milk, may, in a considerable number of cases produce scurvy, but if there is any reason for the giving of pasteurized milk for a long time, the danger can be materially reduced by giving orange juice. I have repeatedly fed children for many months on pasteurized milk where orange juice given in small amounts safeguarded against any tendency towards scurvy.

DR. W. P. COLES: I would like to ask Dr. Morse if it is not true that the statement has been spread rather broadcast in the last two years since the epidemic of septic sore throat that pasteurization of milk is not harmful?

DR. R. W. HASTINGS: I also desire to ask Dr. Morse if he still holds to his own opinion expressed not long ago that pasteurization or boiling of the milk does not injure babies. I would like to say just a word on this subject. At St. Mary's Infant Hospital some years ago, I should say seven or eight there were cases of scurvy undoubtedly. They were using heated milk. For perhaps six or eight years we used the fresh milk, not heated, and had practically no scurvy. Because of the opinion very positively stated by Dr. Rosenau, and not objected to by Dr. Morse, that possibly pasteurization might not have any such effect, for the last year, beginning just about a year ago, the babies there (there have been from 50 to 95 babies all the time) have had foods which were pasteurized. We try to make that a definite pasteurization at 145 degrees for thirty minutes, with all precautions, and to the best of our knowledge there has not occurred any case that could be called scurvy during the year. So far as the experiment has gone, and it is a pretty large experiment—something over 200,000 feedings—this degree of heating has not so altered the food (the formulae varying very much, of course, in different cases) as to bring about any cases of scurvy.

DR. T. J. EASTMAN: (Dr. Morse's paper.) I was going to ask Dr. Morse if he has any idea to what temperature the pasteurized commercial milk is raised? I think they bring it up to 145 degrees, and I think it has been stated before that a percentage of 145 does not alter the characteristics of the milk, whereas the old percentage of 167 or more might alter the characteristics of the milk. The general tendency at the present time is for commercial milk to be pasteurized. The result of the lessening of the number of small dealers is for the large dealers to accumulate milk from a number of dairies and then pasteurize it before it is sold to the public. Along the lines of education which Dr. Morse mentioned it seems to me that if it is a question of the degree of temperature it might be wise to have the milk dealers informed, so that if they are going to pasteurize the milk it should be done at a low temperature.

DR. MORSE, in closing: I feel much complimented to find that some of you have read some of the things which I have written. I have felt for many years that the most important single factor in the causation of scurvy was the heating of milk, and when I was asked, two years ago, to read a paper at a meeting of the Massachusetts Medical Society on the effect of the heating of milk on babies, I started out with the idea that I was going to prove that heating the milk caused scurvy and probably rickets. On looking over the literature carefully I had to come to the conclusion, however, that there was no evidence, theoretical, experimental, or clinical, to prove that the heating of milk caused either scurvy or rickets. I have been over the literature even more carefully since then and have been compelled to come to the same conclusion the second time. In spite of these conclusions, I still feel that my own experience suggests, even if it does not prove, that the heating of milk does play a part in the causation of scurvy, malnutrition and rickets. I feel pretty confident that variations of a few degrees of temperature in the heating of milk does not make any special difference. It is comparatively unimportant whether the milk is heated at 140, 155 or 167 degrees Fahrenheit. More important changes occur if 167° F. is passed. Boiling milk has a very different effect from pasteurization. I think personally that we are going to see much more scurvy in the next five years than we have in the past because of the recent knowledge that boiling the milk makes the casein more digestible. A lot of people are going to boil milk for that reason and a great many are going to forget to give orange juice at the same time.

DR. ARTHUR W. FAIRBANKS read a paper entitled

THE ETIOLOGY OF EPILEPSY.*

* Published in the JOURNAL of April 2, 1914, p. 521.

The Italian Parliamentary Committee has unanimously adopted a report by Professor Casciani on the means of developing the thermal stations of Italy. Among these are the institution of special courses and of travelling professorships that will enable lecturers to go about to different universities carrying on a scientific propaganda.—*British Medical Journal.*

Book Reviews.

Studies in Cancer and Allied Subjects. The Study of Experimental Cancer; a Review. By William H. Woglom, M.D. Conducted under the George Crocker Special Research Fund of Columbia University. Vol. 1. Columbia University Press, New York City. 1913.

This is an imposing quarto sized volume of 288 pages, of which the printed matter of each page would easily go on an ordinary octavo page. The increased size is due to wide margins. The contents consist of chapters as follows:—

1. Brief Historical Review.
2. Attempts to Produce Tumors.
3. Earlier Observations on the Transmissibility of Cancer.
4. Transplanted Tumors.
5. Resistance.
6. Hypersusceptibility.
7. The Spontaneous Tumor.
8. Tumors of a Nature Still Undecided.
9. Therapeutics.
10. General Summary.

It is evident that the task of the author was a large one, and he has acquitted himself well, in spite of some omissions of work of importance and the inclusion of work of doubtful significance and reliability. It is worth while reading by those who wish to obtain an idea of activities and progress in cancer research. The extravagant manner of publication is to be deprecated.

Studies in Cancer and Allied Subjects. From the Department of Zoölogy, Surgery, Clinical

A collection of papers published in the same extravagant manner as the rest of the series.

Studies in Cancer and Allied Subjects. Contributions to the Anatomy and Development of the Salivary Glands in Mammalia.

A beautifully illustrated volume, similar to others of this series, containing the following papers; of interest only to embryologists and comparative anatomists.

1. A Contribution to the Anatomy of the Human Adult Salivary Glands. By Churchill Carmalt.
2. The Development of the Human Salivary Glands. By H. von W. Schulte.
3. The Anatomy of the Salivary Glands in the Lower Primates. By George S. Huntington.
4. The Genetic Interpretation of the Primate Alveolingual Salivary Area. By George S. Huntington.
5. The Anatomy of the Salivary Glands in the Carnivora. By Churchill Carmalt.
6. The Development of the Salivary Glands in the Cat. By H. von W. Schulte.
7. The Anatomy of the Salivary Glands in Some Members of Other Mammalian Orders (Marsupials, Insectivora, Rodents and Ungulates). By Churchill Carmalt.
8. The Mammalian Alveolingual Salivary Area with Special Reference to the Development of the Greater Sublingual Glands of the Pig, Together with a Review of the Literature. By H. von W. Schulte.

Urinary Diseases. By Stephen H. Blodgett, M.D. Boston: Whitcomb and Barows. 1914.

This book, as stated in its preface, has evidently been compiled in large part, from notes used by the author in his lecture for nurses. It is, therefore, a book of well-known facts connected with urinary diseases, stated simply and briefly for the use of nurses. Its nine chapters are followed by two supplementary sections, one of which is devoted to the consideration of recipes, suitable for the patient suffering from glycosuria, and the other to a tabulation of the starch and protein contents of various foods. The book is well printed on good paper, is adequately indexed, and should serve the puprose for which it was evidently written.

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M.D., Adjunct Clinical Professor of Genito-urinary Diseases, Atlanta Medical College; Urologist to Westley Memorial Hospital, etc. Assisted by Omar F. Elder, M.D. The Wassermann Reaction by Edgar Paullin, M.D. Second edition revised. pp. 527, with 109 illustrations and 5 colored plates. Atlanta, Georgia: E. W. Allen and Company.

The first edition of this book, aimed "To present the fundamental principles, and to enter, at the same time, into sufficient detail when considering matters of prime importance." In other words, the book was designed to be better and more comprehensive than a quiz compend, and at the same time to stop short of the completeness and bulk of the larger text-books,—a difficult result to accomplish. It apparently succeeded, however, in its object for now appears the second edition, compelled by the many advances in our urological knowledge, during the last two or three years.

"The more satisfactory treatment of gonorrhea, vaccine therapy, Rowntree and Geraghty's test for functional activity; pyelography; the Wassermann reaction and leutin test; the cultivation of the spirochaeta pallida,

the use of the dark field illumination in the demonstration of the spirochaeta pallida, the inoculation of animals with syphilis, and the discovery of salvarsan and neosalvarsan'' are some of the many recent additions to the field of urology which made this edition necessary.

The increase of our knowledge of urology both in scope and in precision, has been so enormous in the last few years that a compilation of a real text-book into one volume has greatly increased in difficulty. How impossible must it be then to put that knowledge before the medical public in 500 pages! That is the task the writer set himself, and on the whole, he has succeeded fairly well. A very brief consideration of subjects which might seem worthy of a more extensive presentation is often evident, but for the most part, the author has maintained a just perspective and has given us a book of value, a book which carries its subject up to the year of its publication.

Type and paper are of fair quality, and some of the cuts and photographs are excellent, while others are far from being so.

Dorland's American Illustrated Medical Dictionary. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Seventh revised edition. Edited by W. A. NEWMAN DORLAND, M.D. Large octavo of 1107 pages, with 331 illustrations, 119 in colors. Philadelphia and London: W. B. Saunders Company. 1913.

The seventh edition of this valuable dictionary does not differ in appearance or materially in size from its predecessor. The rapid growth of certain branches of medical science has demanded the addition of a large number of words and terms, particularly in the fields of serology, physiology, pathological chemistry and experimental medicine. A complete revision of the book has been undertaken and upwards of 5000 new terms defined. The volume is published as before in flexible covers, and in general it maintains its character of convenience, completeness and reliability.

Supplement to Illustrate an Operating Theatre in Private Practice. By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P. London: Harrison and Sons. 1914.

Mr. Whiteford's original monograph was reviewed in the issue of the JOURNAL for Sept. 19, 1912 (Vol. clxvii, p. 402). This supplement has been prepared in response to requests for a plan and illustrations, which are here provided in three full-page plates. The author has also included a description of additions made to his operating theatre during the year 1913, consisting of a glove-drier, a needle for fascia and muscle, an apparatus for rectal seepage, an apparatus for maintaining Fowler's position, a surgical diet chart, and a list of instruments and linen. The pamphlet is a convenient complement to the unique and valuable original.

Pathology. General and Special. A Manual for Students and Practitioners. By JOHN STENHOUSE, M.A., B.Sc. Second edition, revised and enlarged. Illustrated with twenty-nine engravings and a colored plate. 1913.

This book is a quiz compend in pathology; essentially a book of definitions with questions appended to the various chapters. Of possible use in cramming for such examinations as might be given by state boards.

The Unexpurgated Case Against Woman Suffrage. By SIR ALMROTH E. WRIGHT, M.D., F. R. S. New York: Paul B. Hoeber. 1913.

Admitting the general premise that women are inferior to men, physically, intellectually and morally, it is manifestly unreasonable to concede equality in the matter of the ballot. This is Sir Almroth's position. The work is written in an irritatingly patronizing style, and if the opinions expressed are widespread in England, our wonder grows less at the indignation of certain men and women as expressed in the outburst of militancy through which that country is passing.

The Elements of Bacteriological Technic. A Laboratory Guide for Medical, Dental and Technical Students. By J. W. H. EYRE, M.D., M.S., F.R.S. (Edin.). Second edition; rewritten and enlarged. W. B. Saunders Company. 1913.

This edition is a marked improvement over the first one. It contains very complete directions for the preparation of media and solutions used in bacteriological work, and the methods of procedures commonly employed in bacteriological research. Descriptions of bacteria are not included. The technic for the Wasserman reaction, opsonic index determinations, complement fixation and bacteriological analysis of water, milk, foodstuffs, sewerage and soil are included. There is a chapter on the testing of disinfectants and a series of useful tables. The book is to be heartily endorsed as adequate for the purposes for which it is intended, namely, a laboratory guide for medical, dental and technical purposes.

THE BOSTON

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FEDERAL OR MUNICIPAL QUARANTINE.

EARLY in his administration Mayor Curley, as part of his program of municipal economy, proposed that the quarantine service of the port of Boston be transferred from the local health department to the federal government, thereby saving this city an expense of about $20,000 a year. This plan was vigorously opposed by the Boston Chamber of Commerce and by the mercantile and shipping interests generally. It was favored chiefly by various public officials. To give both sides an opportunity to express their views, a public hearing was held on April 21, before the executive committee of the city council.

Prior to this hearing, Dr. M. Victor Safford, of the United States Public Health Service, had stated the supposed advantages of federal over municipal quarantine in a communication to the daily press, from which we may quote in part as follows:—

"There seems to be an idea prevalent here in Boston that in the matter of precautions against the introduction of exotic contagious diseases, ships arriving at this port are securing or can secure from a local municipal quarantine management dispensations that could not be obtained if the maritime quarantine officers at Boston were federal officials. Those who entertain this idea do not realize the fact that for all practical purposes the control of federal officials over the management of quarantine at Boston or any other port in the United States or its possessions, is absolute.

"The two diseases whose introduction into the country by foreign commerce are at present to be most dreaded by people in this latitude are cholera and bubonic plague.

"The introduction of either of these diseases or any other serious contagious disease at Boston is a matter which concerns the whole country. Only about one-half the passengers who arrive at Boston stay even in New England. It is through officers of the public health service, acting under the direction of the secretary of the treasury, that the federal government in a supposed emergency exercises its authority to prevent such an occurrence.

"In case of suspected danger of the introduction of cholera at this port, for example, there would be immediately sent to the local quarantine station an officer of the public health service with practical experience in handling cholera. If he should deem the sanitary interests of the country to be jeopardized by the manner in which local quarantine officials were handling the situation, an order of the secretary of the treasury requiring certificates of United States public health officers as a prerequisite for the entry of ships at the Custom House would at once follow. This, however, is not likely to happen. Unless a local quarantine official be a hopeless fool, he would welcome the expert assistance which such a public health officer could furnish him. Experience has shown that on these occasions the federal medical officer has found it advisable to mitigate rather than increase the severity of the measures that a local quarantine official is inclined to impose upon commerce.

"The proposition to turn the Boston municipal quarantine establishment over to the federal government has been made by the city officials. It has not been solicited by the government. With their present power of control over local quarantines the federal authorities are entirely willing that the city of Boston and the steamship companies should bear the expense incidental to the administration of the quarantine of the port if they care to do so. Under a federal quarantine management all costs, including those incidental to the removal from ships of passengers by the wholesale, as occurred here in 1911, fall on the federal government and not on the steamship companies.

"It is well known that the municipal quarantine at Boston has been intelligently managed in accordance with requirements prescribed by the federal government. The writer, who as a United States public health officer has been in close touch with the administration of the local quarantine for ten years, is able to testify to this. He also knows that no concessions to commerce have been granted by the local quarantine officials which would not have been obtained as a matter of course from a federal quarantine management, whatever the shipping interests may think they have been getting. Under their present management and with the power of practical control now possessed by the federal government, the actual administration of either

the Boston or New York quarantines is not regarded so important from a national public health point of view as the quarantines of many other ports already under federal arrangement. There is no reason, however, why the proposed transfer of the Boston municipal quarantine plant should not be advantageous to everybody concerned. Where municipal quarantines have been transferred to a federal management, local commercial interests have never thus far made known any desire to return to previous conditions."

At the hearing these views were reiterated by Dr. Safford. The representatives of the various business organizations in opposition to the proposed change summarized their objections essentially as follows: That the present municipal administration of the Boston quarantine service is highly efficient and satisfactory; that to transfer it to federal administration might interfere with present plans for the development of the port; that New York and Baltimore maintain their own quarantine service; that decisions can be more quickly obtained from local than from national authorities; and that a change would hamper shipping interests and divert business to other ports. Among those who spoke in favor of the change were Mr. George F. Babbitt, a former Boston health commissioner, and Mr. Edward F. McSweeney, chairman of the consumptives' hospital department.

Two days after the hearing, in a letter to the public press, Mr. John A. Sullivan, former chairman of the Boston finance commission, and now corporation counsel of the city, stated effectively the views of the advocates of federal control.

"As many persons must have received the impression that the city of Boston is trying to save $20,000 a year by discontinuing its local quarantine service and transferring the same to the federal government without regard to the interests of Boston shippers, or to the future development of our port, I think it only proper to state that every objection which has been raised by the shipping interests has been stated to the treasury department at Washington and that the department has assured the city authorities that all of these objections will be met in a satisfactory manner. This assurance was given to the Mayor before he took definite steps to have the quarantine service transferred to the federal government.

"The government is willing to station an officer in Boston and clothe him with authority to adjust all matters in relation to quarantine without the delays incident to referring such matters to Washington. It has agreed to arrange for the boarding of vessels from daybreak to dark, or earlier or later, if required, an arrangement similar to the one which it has made for the port of Philadelphia, which is now under federal jurisdiction. It has also agreed to reserve at the quarantine station all existing facilities for the care of smallpox patients or persons affected with other dangerous diseases. In short, it stands ready to maintain a service equal in every respect to that now maintained at this port.

"It is true, of course, that the successor of the present secretary of the treasury might, after the Boston service had been transferred to the federal government, change the regulations to the detriment of shipping interests, but he is not likely to do so any more than Boston health officials in the future would be likely to change the regulations made by the present health officials of the city. The fact that the United States government has since 1893 waived the requirement of local inspection of vessels from Canadian ports, although it might have insisted upon such inspection during the intervening years, should be taken as a sufficient indication of the good faith of the government.

"At present only three important ports in the country are under local control—New York, Baltimore and Boston. In all the other Atlantic ports under the control of the federal government, as well as the ports on the Pacific, all of which are under federal control, the service is performed in a satisfactory manner.

"Quarantine service is not local but national in character. The national authorities have the power to follow suspected cases into any part of the United States and to isolate them for the public protection. Local authorities, whether state or municipal, have no jurisdiction beyond their own boundaries. In this respect municipal or state control of quarantine is inferior to national control. The health of the entire community should be regarded as paramount to the interests of shippers at any port; but where, as in the present case, the shipping interests will be fully protected and public health better conserved, there would seem to be no sound reason for opposition to the proposed transfer.

"It has been suggested that Boston should not take the step until New York and Baltimore have come under federal control. If New York and Baltimore take the same position all three ports will forever remain outside of federal control. If, on the other hand, Boston comes under federal control, and the service proves satisfactory, it is probable that New York and Baltimore will ask that their services be transferred to the federal government.

"Any stranger who attended the hearing at the City Council yesterday would have come to the conclusion that the shipping interests were opposing the transfer because of the ultra-conservatism which fears any change simply because it is change, or because they were now enjoying illegal privileges which they feared they

would lose if placed under federal control. The chairman of the city's Board of Health is authority for the statement that no illegal privileges are given, therefore there seems to be no reason why the shipping interests should oppose the transfer.

"Of course the saving of $20,000 or $25,000 a year is not a matter of great importance. The city can afford to waste this amount of money just as well as it could afford to waste money for any other unnecessary purpose, but if, as the hearing of yesterday clearly disclosed, the service will be at least equal to that now rendered, there ought not to be any opposition to the saving of $20,000 or $25,000 a year by the city, for there are many useful purposes for which this money is needed."

In rejoinder to Mr. Sullivan's communication, the following letter from Mr. William C. Brewer was published in the daily press of May 2:—

"The principal objection advanced by the shipping interests against federal quarantine is that it entails a final decision from Washington on any matters which the local federal doctor feels he must submit to the department. Any one conversant with departmental routine knows what delays this may entail. Under city quarantine an opportunity is given to the interested party to lay his case before the health department and obtain a ruling without any delay.

"Mr. Sullivan perhaps unconsciously supports the position taken by the shipping interests when he writes that the treasury department is willing to clothe their representative in Boston with authority to adjust matters 'without the delays incident to referring such matters to Washinton.' Does not this appear an admission on the part of the federal authorities that the argument of the shipping interests, as to probable delay, is well founded. Even further, Mr. Sullivan admits that a future secretary might modify these concessions 'to the detriment of shipping interests.' And yet the state of Massachusetts is spending $9,000,000 to develop the port of Boston. It is difficult to reconcile the attitude of the city and the state.

"It is not my desire to discuss here the relative merits of federal and local quarantine, suffice it to say, that our local quarantine is subject to federal supervisory control and regulations and that it was conceded that our city quarantine was efficient and able to safeguard the public health.

"I think that the 'fears' of our local shipping, as to any change in the present system, have some justification when the following figures of the transatlantic passengers passing through the principal ports of the United States are noted and their system of quarantine:

New York—State control	1,708,358
Boston—City control	134,318
Philadelphia—State-Federal	87,044
Baltimore—City	47,533
Portland—Federal	15,816
Galveston—State	10,459
New Orleans—Federal	1,491

"Last, and by no means least, as the proposed transfer of our quarantine is based on economy for the city, it is a fact that the arrangement suggested by the treasury department carries with it the proviso that the city shall continue to send down to quarantine and pay the federal government for their maintenance, all cases of infectious diseases and that the city shall agree to maintain a means of transportation to carry such cases to and from quarantine. It would seem as though this arrangement will still cause the city considerable expense, especially as the cost of transportation, particularly in the event of an epidemic, is problematical.

"When all the ports competitive to us pass entirely under federal control, then and not till then, should Boston seriously consider the proposition and even then we must not forget our Canadian rivals, who are advancing by leaps and bounds and successfully catering for a large share of the passenger travel."

It seems that probably both the opponents and the advocates of the change speak from a slightly biased point of view. The latter are public officials and tend to speak *ex parte;* the former, as business conservatives, are prone to object to any change on general principles. As a matter of fact, there seems no urgent need for making the change at present, and again if it were made probably no serious disadvantages would follow.

At the meeting of the city council on May 5, Mr. Sullivan requested more time to investigate the problem, and definite action on the proposal was postponed for another week.

As the JOURNAL goes to press we learn that at its meeting on May 12 the City Council rejected the proposal to transfer the quarantine, but that the plan will probably be revised in connection with the proposed reorganization of the State Board of Health.

THE RELATIONSHIP OF HYSTERIA TO OTHER CONDITIONS.

HYSTERIA is now generally conceded to be a psychoneurosis, in which the primary etiologic factor is mental. Viewing the disorder from this psychic aspect we find that hysteria has most intimate relationships to various other psychic states, normal and abnormal.

In order to understand the more clearly the relationships to which we shall refer, it would be

advisable to review here the two definitions of hysteria which have received the widest recognition. According to Binet, hysteria is a condition of double consciousness, with two streams of consciousness flowing side by side, relatively independent and separated by amnesia. Janet would define hysteria as a form of mental depression characterized by the retraction of the field of personal consciousness and by the tendency to the dissociation and the emancipation of systems of ideas which by their synthesis constitute the personality. From these two definitions as a starting point, various correlationships between hysteria and other allied conditions may be built up. The relationship between hysteria and various other states of mental dissociation at once comes to mind. And, as one would expect, this similarity did not escape the attention of neurologists, psychopathologists and psychiatrists who have concerned themselves with the problem of hysteria.

Janet tells us that to be suggestible is to be hysterical, and that only hysterics can be hypnotized. He believes in the identity of the hysterical and the hypnotic states, based upon the common factor of suggestibility. Sidis has called attention to the so-called hypnoidal state, a mental state or state of consciousness between waking and sleep on the one hand and hypnosis on the other, which is thus a semi-waking state, which is believed by Sidis to be the primitive rest state of animals, and from which both sleep and hypnosis are developed. There is thus a relationship between hysteria and the hypnoidal state, as well as between hysteria and hypnosis. Claperède reminds us that both sleep and hysteria are biological defense reactions. Bernheim asserts that the state of hypnosis is allied to that of sleep. And McDougall points out the similarities between sleep and hypnosis. Prince and others have shown the close relationship between hysteria and the cases of multiple or dissociated personalities. And latterly the results obtained by psychoanalysis have proved the intimate association of hysteria to the so-called psychopathological acts of everyday life, such as slips of the tongue and pen, acts of forgetfulness and the like. Snyder laid stress upon the naïve, simple, infantile, primitive mentality which we find in so many hysterics, and its possible relation to the infancy of the race at once comes to mind. Others have noted certain points of similarity between hysteria and mental enfeeblement.

The most important advance in this direction in the past few years has been given to us as a result of intensive studies in dementia precox. So noteworthy has been the progress that it should be touched upon at somewhat greater length. Psychopathologists look upon dementia precox as an inadequate biological reaction due to internal ideas or external experiences. It is to be noted that this conception had previously been applied to the study of the elucidation of the mechanism of hysteria. It has been found that dementia precox shows many features strongly resembling hysteria. The most prominent features of this type are the delirious episodes, the irrelevant replies to questions, the stupor, the vasomotor disorders and peculiar disturbances of consciousness. It is also known that many of the features of katatonic stupor resemble hypnosis. It was this which led Evenson to regard dementia precox as a narrowing of the field of consciousness, thus corresponding quite closely with the view of the psychogenesis of hysteria as defined by Janet. It has been discovered that both dementia precox and hysteria show phenomena pointing to a profound mental dissociation, the latter causing a curable hysteria in one case, and an incurable dementia precox in another.

In a recent paper entitled "Recent Trends in the Psychopathology of Dementia Precox," Coriat tells us that Evenson observed a close similarity between some of the prominent symptoms of dementia precox, such as negativism, stereotypy, peculiar attitudes and the reaction of a normal person who has become preoccupied by a thought. Evenson went so far as to suggest that the essential symptoms in both the preoccupied individual and in the katatonic were due to a narrowing of consciousness around a central content. He further declared that there existed a close analogy between hypnosis and katatonic stupor.

It is due, however, to the very splendid work of Jung and Bleuler, the so-called Zurich school, that the most remarkable advance in the psychopathology of dementia precox has been obtained. Jung states that the psychological mechanisms of dreams and hysteria are most closely related to those of dementia precox. As Coriat says, when the underlying complexes control the entire mental life we have dementia precox, whereas when they merely lessen the amount of energy at the disposal of the patient we have hysteria.

REORGANIZATION OF THE BOSTON BOARD OF HEALTH.

In the issues of the Journal for Jan. 22 and Feb. 26 we published editorials on the "Reorganization of the Massachusetts State Board of Health." What was then said of the desirability of a single highly paid commissioner of health in authority, with an unpaid advisory board, is equally applicable to the problem of local health administration in large cities.

In Boston the term of one of the three members of the local board of health expired last month. His place has not yet been filled and the time seems opportune to consider the possibility and desirability of reorganization of the board on the basis which we have approved for the state board. In a recent letter to the daily press on this subject, Dr. Richard C. Cabot said in part:—

"Those of us who followed the work of the board of health for a number of years have reason to believe that the work of that board was never so good as it is today. Despite all of the drawbacks and political interferences to which it has been subjected, it has been and is doing a good work.

"But it ought to do far better work, and it is not at all likely to do so under its present faulty organization. It certainly ought to be a single-headed board and not a three-headed board, as at present. It certainly ought to be free to discharge or pension off its superannuated employees."

What is most important of all is that the reorganized board should be free from political control. The supervision of public health is a business, and should be administered by a competent expert for the benefit of the public.

THE AMERICAN GYNECOLOGICAL SOCIETY.

The thirty-ninth annual meeting of the American Gynecological Society is to be held next week in Boston, and the medical profession is cordially invited to its sessions. The headquarters of the Society will be at the Harvard Club. The scientific meetings on Tuesday and Thursday, May 19 and 21, are to be held at the Boston Medical Library. Wednesday, May 20, will be spent at the Brookline Country Club.

For the morning session on May 19, four papers are announced, by Drs. Manton of Detroit, Clark of Philadelphia, Byford of Chicago, and Higgins of Pittsburgh. The afternoon session on this day will be devoted to a symposium on anesthesia. In the forenoon of May 20 will be the president's address, by Dr. J. Whitridge Williams, of Baltimore; a memorial of Henry J. Garrigues, by Dr. Brooks H. Wells; and papers by Dr. Robert L. Dickinson of New York, Dr. E. A. Codman of Boston, and Dr. Reuben Peterson of Ann Arbor. In the afternoon the principal paper will be by Dr. Wilhelm Nagel, of Berlin, on "Operative Treatment of Prolapse of the Vagina." Eight papers are announced for the sessions on May 21.

The American Gynecological Society last met at Boston in 1904. The immense progress of the past decade in medical science has affected its specialty as importantly as it has the other branches of medicine, and will be reflected in its proceedings, which will be reported in subsequent issues of the Journal. The cordial welcome of the Boston profession, as well as of the local members of the Society, awaits the members from other cities and the distinguished guests.

MEDICAL LEGISLATION. THE DENTAL NURSE BILL.

In the issues of the Journal for Jan. 1 (p. 24), and Jan. 22 (p. 139) we commented editorially on the so-called "dental nurse bill," submitted to the General Court by and with the approval of the Massachusetts Civic League, providing for the appointment of a state board of dental examiners in this Commonwealth, and defining their duties. After prolonged discussion, this bill was on May 6 favorably reported to the House by the committee on public health, but with five of the eleven members of this committee dissenting. The fate of this bill in the legislature will be watched with interest by both advocates and opponents. We have only to reiterate our approval of its purpose and our hope that it may be enacted into law.

MEDICAL NOTES.

BUBONIC PLAGUE IN CHINA.—Report from China states that, during the week ended April 29, 193 cases of bubonic plague were notified at Hongkong.

A VERSATILE AND VIGOROUS CENTENARIAN.—Robert Crichton, of Caterham Valley, England, is said to have been born on April 3, 1812, at Alyth, in Perthshire, Scotland. While studying law, he served for a time as clerk to Sir Walter Scott, when the latter was sheriff of Midlothian. In 1839 Crichton sailed for Australia, and spent his active life there as a pioneer in New South Wales. Since his return to England in 1894, he has travelled extensively in Egypt, Italy, and Palestine. In 1910 he renounced his lifelong use of alcoholic beverages, having become convinced that they were injurious to his health. He continues, however, to take snuff, which he believes harmless.

COMPARATIVE MORTALITY OF MEASLES.—Statistics recently published show that the mortality of measles per 100,000 is 48 in Chile, 44 in Hungary, 38 in Spain, 35 in Belgium, 33 in Austria, 29 in England and Wales, 10.8 in the United States, 6 in Sweden, 3.4 in New Zealand, and 2.4 in Australia.

BUBONIC PLAGUE IN HAVANA.—Report from Havana states that another death from bubonic plague occurred in that city on April 30. This makes a total of 16 cases and 3 deaths of the disease since the recent introduction of the infection.

A MUNIFICENT HOSPITAL GIFT.—It is announced that Mr. James Deering, of Cleveland, Ohio, has made a gift of $1,000,000 for the endowment of the Wesley Hospital of that city, with the provision that it shall be a teaching hospital under control of Northwestern University. This munificent gift is made in memory of the donor's father and sister.

GEORGIA MEDICAL HALL.—On Tuesday evening, March 31, the new building of the Georgia Medical Society was formally dedicated at Savannah, Ga., with appropriate exercises. The principal address was by Dr. J. Ewing Mears, of Philadelphia, who spoke on "The Significance of Construction and Opening of the Medical Hall." Dr. Mears has established a foundation in the society's library for the purchase of books.

BOSTON AND NEW ENGLAND.

AN IMPORTANT OPPORTUNITY FOR RESEARCH.—Report from Washington, D. C., on May 4 states that, in response to a letter from Dr. J. Collins Warren, of Boston, Surgeon-General Blue, of the United States Public Health Service, has directed that ten beds in the Marine Hospital at Chelsea, Mass., be placed at the disposal of the Harvard Medical School, for cooperative work in the study of tropic diseases.

TRUSTEES OF BOSTON CITY HOSPITAL.—At the recent annual organization of the board of trustees of the Boston City Hospital, Mr. A. Shuman was re-elected president, and Dr. John J. Dowling, recently appointed, was duly qualified as a member.

NEW HAMPSHIRE MEDICAL SOCIETY.—The one hundred and twenty-third annual meeting of the New Hampshire Medical Society was held at Concord, N. H., on Wednesday of this week, May 13. Among the papers presented by invited guests was one on "The Conduct of a Case of Labor," by Dr. Franklin S. Newell, and one on "Fractures of the Spine and Pelvis," by Dr. Frederic J. Cotton, of Boston. Dr. George W. Crile of Cleveland, spoke on "Anoci-Association."

FOXBOROUGH STATE HOSPITAL.—The recently published twenty-second annual report of the trustees of the Foxborough State Hospital, administering also the Norfolk State Hospital, records the work and progress of these two institutions for the year ended Nov. 30, 1913. During this period the total number of inebriate patients under treatment was 1437, and of insane 237. The out-patient department, during the four years since its establishment, has followed 2261 cases. The new buildings at Norfolk were completed and ready for occupancy on Jan. 1, 1914. Among the urgent present needs of the institution is an appropriation to enable the foundation of a farm-colony for the treatment of women inebriates.

WORCESTER CITY HOSPITAL.—The recently published forty-third annual report of the trustees of the Worcester (Mass.) City Hospital records the work and progress of that institution for the year ended Nov. 30, 1913. During this period 5390 patients were treated in the wards, 23,278 treatments were given in the out-patient

department, and 1069 in the accident room. From the training-school 32 nurses were graduated. New buildings are in progress of construction for the children's ward and the nurses' home.

Office of Vital Statistician Restored in Boston.—In a recent issue of the Journal we noted the abolition by Mayor Curley of the office of vital statistician in Boston. As a result of numerous protests, this order has been rescinded, and Dr. William H. Davis will continue to hold the position.

Scarlet Fever at Bedford.—Report from Bedford, Mass., states that 15 cases of scarlet fever have occurred in that town during the past six weeks, and that the local public schools have been ordered closed for ten days to prevent further spread of the infection.

Smallpox Case in Amesbury.—Report from Amesbury, Mass., states that a case of smallpox was discovered in that town on April 30. The patient, who had been on a recent visit to Boston, has been quarantined, and all contacts have been vaccinated.

A Living Centenarian.—Ralph Butler, of Dorchester, Mass., is said to have been born on May 5, 1813.

A Prolific Centenarian Slave. — Mrs. Thomas Spence, a negress who died recently in Boston, is said to have been born in 1801 at Camden, Me. She was sold into slavery, and all of her sixteen children, three of whom survive her, were born slaves. She was twice married.

Women in Foreign Medical Work.—The annual meeting of the Women's Medical Association for Aiding Women in Medical Work in Foreign Countries was held last week in Boston. The principal speaker was Dr. Katharine B. Scott, who has been working for several years in Madura, India. The following officers were elected: President, Dr. Emily R. Howard; first vice-president, Dr. Elizabeth E. Ritter; second vice-president, Dr. Blanche A. Denig; secretary, Dr. Marian Coon; treasurer, Dr. Helen I. Woodworth; auditor, Dr. Anna O'Sullivan; chairman of China work, Dr. Frances Morris; of India work, Dr. Alice H. Bigelow.

Brockton Board of Health.—The recently published thirty-second annual report of the department of public health of Brockton, Mass., records the activities of that body for the calendar year 1913. During this period the death-rate was only 10.88 and the birth-rate 36.23. The usual tables and departmental reports are appended.

Cases of infectious diseases reported to the Boston Board of Health for the week ending May 5, 1914: Diphtheria, 24; scarlatina, 93, of which 18 were non-residents; typhoid fever, 3; measles, 88, of which 2 were non-residents; tuberculosis, 58, of which 2 were non-residents.

The death-rate of the reported deaths for the week was 15.49.

NEW YORK.

American Association of Medical Jurisprudence.—The annual meeting of the American Association of Medical Jurisprudence was held at the New York Academy of Medicine on May 2, and among the questions discussed were the sterilization of mental defectives and medical experimentation upon condemned murderers. Dr. Charles A. Boston, a prominent member of the New York Bar, was elected president; succeeding Dr. Reynold Webb Wilcox, the first president of the association. San Francisco was selected as the place for holding the next annual meeting.

New Cancer Hospital.—It is announced that arrangements have been effected for the control by the Cornell University Medical College of the largest cancer hospital in this country. The buildings for this are those of the General Memorial Hospital, at 105th and 106th Streets and Central Park West, an institution which was originally intended for the treatment of cancer. A fund of over $1,000,000 has already been secured, and $500,000 of this is stated to have been contributed by Dr. James Douglas, head of the house of Phelps, Dodge and Company, through whom also the hospital will receive a large supply of radium.

Resignations at Columbia.—At the monthly meeting of the trustees of Columbia University, on May 4, the resignations were accepted of Prof. F. J. Goodnow, who has been made president of Johns Hopkins University; Dr. Theodore C. Janeway, Bard professor of the practice

of medicine; and Frederick Peterson, professor of psychiatry. Dr. J. Ramsay Hunt having resigned the professorship of neurology, Dr. Frederick Tilney, now associate in anatomy, was appointed to succeed him in that position. Among the gifts announced at the meeting was one of $500 from H. E. Sargent of Chicago for research work in anthropology.

Results of Friedmann Treatment.—Health Commissioner Goldwater has published in the department's *Weekly Bulletin* a report of an investigation of the cases of tuberculosis treated in New York by the Friedmann remedy, showing the entire failure of the treatment. Of the total of 77 patients, 19 could not be found, while 11 were reported to have removed from the city permanently, so that nothing could be learned of their condition. The department was, therefore, able to obtain reports on but 47 of the 77 cases. The reports are summarized as follows: At home, 5; in hospitals (indicating failure to cure), 22; attending clinics (showing need of further treatment), 7; attended by private physician, 1; died, 12. The report concludes with the words, "Comment is unnecessary; the figures tell their own story."

Death-Rate for the Week Ended May 2.—There were 1593 deaths and a death-rate of 14.89 per 1000 of the population reported during the past week, as against 1532 deaths and a rate of 14.88 for the corresponding week of 1913, an absolute increase of 61 deaths, and an increase in the rate of .01, which is equivalent to a relative increase of 1 death. The causes which showed a decreased mortality were diphtheria and croup, cerebral spinal meningitis, organic heart disease, pneumonia, tuberculous diseases other than pulmonary, Bright's disease and nephritis, and deaths from violence. The causes showing an increased mortality were measles, scarlet fever, whooping cough, typhoid fever, diarrheal diseases under five years and pulmonary tuberculosis.

Viewed from the point of age grouping, the mortality of infants under one year of age was approximately the same, while that between one and five years of age was considerably below that of the corresponding week of 1913. The mortality between five and sixty-five years of age showed very little change over the figures of 1913, while that of the age over sixty-five years a considerably increased mortality was recorded.

The borough of Richmond showed the highest death-rate for the week, due to the presence of several large institutions, the inmates of which come from other parts of the country, and to the unfavorable age distribution of the population. The next highest rate was found in the borough of Manhattan, followed by the borough of Brooklyn, borough of The Bronx, and the lowest mortality being recorded in the borough of Queens.

The death-rate for the first eighteen weeks of 1914 was 15.43 per 1000 of the population as against a rate of 15.63 during the corresponding period of 1913, a decrease of .20 of a point.

Current Literature

Medical Record.

April 25, 1914.

1. Mendel, L. B. *The Nutritive Significance of Different Kinds of Foodstuffs.*
2. Lusk, G. *Food from the Standpoint of Energy.*
3. Berkeley, W. N. *Results of Three Years' Clinical Work with a New Anti-serum for Cancer.*
4. Bradford, S. S. *The Rôle of Exercise in the Treatment of Visceroptosis, with Special Reference to the System of W. Curtis Adams.*
5. Mays, T. J. *Has the Tuberculosis Death-Rate Declined Recently?*
6. Knox, H. A. *A Comparative Study of the Imaginative Powers in Mental Defectives.*
7. Sittenfield, M. J. *Recent Advances in the Study of the Pathogenesis of Cancer.*
8. Robinson, B. *The Value of Accurate Diagnosis in Disease.*
9. *Boehme, G. F., Jr. *"Tango-Foot."*

9. Under the name "tango-foot," Boehme describes a condition which he has observed frequently of late and which he ascribes to the extraordinary flexibility of the ankle which the new dancing requires. The strain comes especially on the tibialis anticus, the extensor communis digitorum, and the extensor proprius hallucis, and the result is a teno-synovitis of this muscle group. The symptoms are stiffness of the ankle joint and pain along the outer anterior aspect of the lower third of the leg. Abstinence from dancing is often sufficient treatment, but complete rest of the foot may be necessary. Counter-irritation and baking give relief in severe cases. [L. D. C.]

New York Medical Journal.

April 25, 1914.

1. Ruhrah, J. *The Prophylaxis of Measles.*
2. Porter, W. H. *The Value of Cocaine in Disturbances of Metabolism.*
3. Boston, L. N. *Private Cases of Diabetes and Glycosuria Treated in* 1913.
4. Kennedy, J. W. *The Surgeon as the Autocrat of the Operating Room.*
5. Bartholow, P. *Medical Testimony and Legal Supervision.*

6. CROTHERS, T. D. *The Effects of Alcohol and Tobacco on Life Expectancy.*
7. BAKETEL, H. S. *The Army Medical Corps.*
8. BRILL, A. A. *The Psychopathology of the New Dances.*
9. STIMSON, C. M. *A Magnetized Needle Holder.*
10. PABST, C. F. *Dangerous Medical Legislation.*
11. CARREL, A. *The Transplantation of Organs.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

APRIL 25, 1914.

1. TYSON, J. *Inflammation of the Gall-Bladder. Its Causes, Symptoms and Results.*
2. MOSHER, C. D. *A Physiologic Treatment of Congestive Dysmenorrhea and Kindred Disorders Associated with the Menstrual Function. Third Note.*
3. STROUSE, S., AND BEIFELD, A. H. *A Case of So-called "Renal Diabetes" Possibly Traumatic in Origin.*
4. *PFAHLER, G. E. *The Roentgen Rays in the Diagnosis of Gall-Stones and Cholecystitis. An Improvement in Technic.*
5. PHILLIPS, W. G., JR. *The Absorption and Tensile Strength of Certain Absorbable Animal Ligatures. A Preliminary Report.*
6. KLEINER, S. B. *A Clinical Method for the Rapid Estimation of the Quantity of Dextrose in Urine.*
7. SMITHIES, F. *A New Fluoroscopic Sign for the Differentiation of Pyloric Spasm of Extragastric Origin from That Associated with Uncomplicated Gastric Ulcer on or Near the Lesser Curvature.*
8. *BLOCK, F. B. *The Effect of Operation on Kidney Excretion as Indicated by the Phenolsulphonephthalein Test.*
9. *PARDEE, H. E. B. *Form of the Electrocardiogram. Diagnostic Significance of Its Variations.*
10. *DAVIS, G. G. *Roentgen Ray as a Diagnostic Measure in Tuberculous Lymphadenitis.*
11. SUTTON, R. L. *An Extensive Case of Plantar Warts.*
12. TRUESDALE, P. E. *Cancer of the Splenic Flexure.*
13. HITCHINGS, F. W., AND SLOAN, H. G. *Appendicitis Following Ingestion of Shot for "Cuban Itch."*

4. Pfahler states that gall-stones can be shown by x-ray only when they are composed of a substance of greater or less density than the surrounding tissues. This will usually mean that they must contain some lime salts, though the quantity may be small. The author's records show positive findings in 74%, but in general not more than 50% can be counted on being positive.

8. Block finds that the effect of ether anesthesia on healthy kidneys is practically nil so far as reducing the excretory power of these organs is concerned. Traces of albumen before operation should not give much concern, but larger amounts should cause concern if accompanied by casts. The duration of anesthesia in any given case does not in itself signify the amount of injury which the kidneys will sustain. The position of the patient on the table, the character of the operation and the administration of proctoclysis have not shown any effect on the percentage of phenol-sulphonephthalein excretion after as compared with that before operation. In one-third of the cases there is increased excretion after operation.

9. Pardee's article on the use of the electrocardiogram is of value and interest.

10. Davis finds that roentgenoscopy is valuable in making a differential diagnosis of enlargement of cervical lymph nodes. This is possible only when tuberculous nodes have become necrotic and caseous and calcification later takes place. It is the calcium salt which shows in the x-ray. [E. H. R.]

THE LANCET.

APRIL 11, 1914.

1. JONES, F. W. *The Arris and Gale Lectures on the Morphology of the External Genitalia of the Mammals.*
2. DREYER, G., AND WALKER, E. W. A. *An Analysis of the Problem of the Minimal Lethal Dose and Its Relationship to the Time Factor.*
3. GLYNN, E. E., REES, A. A., POWELL, M., AND COX, G. L. *Improved Methods of Standardizing Bacterial Vaccines in Hemocytometer Chambers.*
4. *THIELE, F. H., AND EMBLETON, D. *A Method of Increasing the Accuracy and Delicacy of the Wassermann Reaction.*
5. WEST, S. *Notes on Diabetic Retinitis.*
6. HOWARD, H. C. *The Therapeutic Value of the Potato.*
7. BROCK, B. G. *The Mortality on the Rand: Some of Its Causes.*

4. The writers describe a method for performing the Wassermann reaction which they believe to be simple, quick, and absolutely controlled. This may prove of interest to those engaged in this special work. [J. B. H.]

THE INDIAN MEDICAL GAZETTE.

APRIL, 1914.

1. *NEVE, A. *The Surgery of Tubercular Glands.*
2. EWENS, G. F. W. *Insanity from Exhaustion.*
3. BERKELEY-HILL, O. *A Short Analysis of Eighty-Nine Cases of Epilepsy in the Punjab Lunatic Asylum.*
4. HAUGHTON, S. *The Prophylaxis and Treatment of Pre-Eclamptic Toxemia and Eclampsia.*
5. BRADFIELD, E. W. C. *Anoci-Association and Cancer of the Cheek.*
6. HINGSTON, C. A. F. *An Analysis of Seventy-Seven Cases of Placenta Previa at the Government Maternity Hospital, Madras.*
7. NEWMAN, E. A. R. *A Bismuth Paste Injector.*
8. PRATT, D. E. *Two Cases of Abdominal Tumors with Curious Complications.*
9. ROBERTS, J. M. *Zinc Rod in the Uterus.*

1. Neve's report is based on the history of 800 operations in the Kashmir Mission Hospital. Of these 75% were cured, 15% improved, and 10% had sinuses or recurrence. The author believes in the efficacy of this method of treatment rather than in the use of tuberculin injections. [R. M. G.]

BRITISH MEDICAL JOURNAL.

APRIL 11, 1914.

1. *THOMSON, ST. C. *Three Years' Sanatorium Experience of Laryngeal Tuberculosis.*
2. *WILKINSON, W. C. *Tuberculin Treatment as the Essential Method of Dispensing Sanatorium Benefit.*
3. SAHLI, H. *A Contribution to the Critical Study of Therapeutic Statistics.*
4. *RENTON, J. M. *Some Observations on Tuberculosis of the Kidney.*
5. *NEVE, A. *The Surgery of Tuberculous Glands.*
6. CHAMPTALOUP, S. T. *Multiple Subcutaneous Tuberculosis Following Circumcision and Treated by Tuberculin.*
7. JESSEL, G. *The Possibilities of Domiciliary Treatment in Phthisis.*

1. Thomson, in an interesting and valuable paper, finds the larynx involved in 25.6% of selected sanatorium cases; a considerable number, however,

showed *no active lesions*. This occurs much more frequently in early cases than is generally supposed. The prognosis is much worse with such a complication. There may be no symptoms of laryngeal trouble and therefore the larynx should be inspected in every case. Improvement of lung and larynx generally go on together, but rarely the larynx gets better while the lung gets worse. Arrest of this condition can be effected in 20.7% of all cases. The galvano-cautery is the best method of treatment locally, but sanatorium treatment is by far the best in all cases; local measures are far more promising in such instances.

2. This is a typical article by this well known ardent believer in tuberculin in phthisis. As usual, he reports remarkable cures of advanced cases of consumption under tuberculin and dispensary treatment. His claims are too remarkable to be taken at their face value, but in England at least, his ideas seem to be slowly but surely gaining credence. The article is of distinct interest.

4. This is a short paper based on five cases with valuable reference to the work of others on the subject. While nothing new is presented, the article is of value.

5. Neve bases his work on the surgery of tuberculous glands in 800 cases operated on in Kashmir, India; 75% were cured, but of these in 10% a recurrence might be expected. (This 10% is probably too low a figure.—J. B. H.) He emphasizes preliminary treatment of teeth, tonsils, ears, etc. In this class of patients radical measures are needed in order to keep control of the patients. Considering the class of patients, his results are remarkably good. [J. B. H.]

EDINBURGH MEDICAL JOURNAL.

APRIL, 1914.

1. *ROSS, T. A. *The Nature and Treatment of Neurasthenia.*
2. *MITCHELL, A. P. *The Milk Question in Edinburgh.*
3. *MCNEIL, C. *Scrofula or Hypersensitiveness to Tuberculous Infection.*
4. *BARCROFT, D. M. *Modern Treatment of Consumption.*
5. *WATSON, D. C. *Manifestations and Treatment of Intestinal Toxemia.*

1. This is a long and practical article on the treatment of neurasthenia and its nature. Ross discusses its symptoms, mental and physical, the need of a careful history, going deeply into underlying causes and the need of getting the patient's confidence. He discusses the work of Dubois and Mitchell and others and then goes into details of treatment, rest in bed, diet, massage, baths.

2. This article is a striking account of the milk situation in Edinburgh with valuable suggestions as to prevention of tuberculosis among cattle, and how to procure a supply of clean milk, butter, etc. He is an ardent advocate of the sterilization of milk and believes that the danger of infantile rickets and scurvy has been greatly exaggerated.

3. In this paper McNeil attempts, but without success, to describe scrofula as a definite clinical entity. He discusses the clinical features, which are simply those of the weak, poorly-nourished and tuberculous child, and evidently believes in the old saying (which has done much harm) that scrofulous children later on rarely develop pulmonary tuberculosis. According to him scrofula is something more than a variety of tuberculous infection and is allied to the status lymphaticus. (The reviewer is strongly of the opinion that such discussion as this are utterly futile.—J. B. H.)

4. Barcroft urges individualizing in each case of phthisis as to treatment. Tuberculin in experienced hands is of great value. Artificial pneumothorax is beyond the scope of general practitioners. Intensive iodine treatment is still on trial. The sanatorium is of value and particularly as an educative agent.

5. In the treatment of intestinal toxemia, Watson discusses rest, diet in great detail, treatment of the bowels, stimulation of renal excretions, hydrotherapy, massage and exercise, and vaccines. [J. B. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

NO. 14. APRIL 7, 1914.

1. STÜHMER, A. *Salvarsanized Serum.*
2. *ESKUCHEN, K. *The Treatment of Cerebro-spinal Lues According to Swift and Ellis.*
3. PONNDORF. *The Cure of Tuberculosis.*
4. KAHLE, H. *Silicic Acid Metabolism in Cancer and Tuberculosis, and Its Significance in the Treatment of Tuberculosis.*
5. RÖSSLE, R. *The Silicium Treatment of Tuberculosis.*
6. PRINGSHEIM. *The Diagnostic and Prognostic Value of Repeated Local Tuberculin Reactions in Adults.*
7. STUMPF, J. *The Prophylaxis and Treatment of Cholera from Personal Experience in Belgrade.*
8. LÖFFLER, C. *The Liver and Spleen in X-ray Plates.*
9. ABDERHALDEN, E., AND FODOR, A. *Further Investigations on Proteolytic Ferments in the Blood of Pregnant Women. Studies on the Dialysate by Ninhydrin and Estimation of Its Nitrogen Content by Micro-analysis.*
10. ABDERHALDEN, E., AND GRIGORESCU, L. *Biological Tests with the Dialysis Method.*
11. SCHIFF, E. *The Value of Abderhalden's Reaction in the Diagnosis of Pregnancy.*
12. SCHUBERT, M. E. *The Treatment of Furunculosis in Infants with the Thermo-cautery.*
13. *OBMANN, K. *A Case of Generalized Vaccinia with Eczema Capitis.*
14. MENDL, J. *The Diagnosis of Cerebral Hemorrhage.*
15. WIESEL. *Cymarin, a New Heart Tonic.*
16. ALTER. *The Toxicity of Salvarsan.*
17. GANS, O. *The Technic of Bleeding and Intravenous Infusions.*
18. OELLER, H., AND STEPHAN, R. *Clinical Studies with Abderhalden's Dialysis Method.*

2. Eskuchen has given the Swift-Ellis intraspinous salvarsan treatment in nine cases of tabes, in two of cerebro-spinal lues, and in five cases of dementia paralytica. Eskuchen concludes that by this form of treatment, the pleocytosis of the cerebro-spinal fluid was diminished rapidly, the Wassermann reaction was but slightly weakened, and that the colloidal gold test remained unchanged. Subjectively, various symptoms were quickly and markedly bettered and the progression of the disease was arrested.

13. Obmann reports the case of a child who developed fever and a generalized eruption after vaccination. In the rare similar cases which have been reported, there has been discussion as to whether this complication was due to auto-inoculation or to a general infection. Obmann believes that in his case a general infection took place, since the eruption developed in areas where auto-infection seemed impossible, and because the patient showed such symptoms of a systemic disturbance as high fever, an enlarged spleen, leucocytosis with relative lymphocytosis and inflammation of the mucous membanes of the nose and mouth. [R. F.]

BERLINER KLINISCHE WOCHENSCHRIFT.

No. 8. FEBRUARY 23, 1914.

1. *MORO, E. *Concerning the Recurrent Umbilical Colic in Older Children.*
2. *FRIEDJUNG, J. K. *The So-called Recurrent Umbilical Colic of Children.*
3. ROSENTHAL, F. *Impressions of an Expedition to Bulgaria, with a Contribution to the Diagnosis and Treatment of Asiatic Cholera.*
4. ZYPKIN, S. M. *The Treatment of Cirrhosis of the Liver with Keratin.*
5. RAUTENBERG, E. *Miliary Tuberculosis and Bacillaemia.*
6. FRIEDEMANN, M., AND SCHÖNFELD, A. *On the Theory of the Abderhalden Reaction.*
7. SCHULTZ, F. C. R. *A Contribution on Serum Sickness.*
8. ENGEL, C. S. *A Demonstration of Colored Photomicrographs (Lumière) Showing the Development of Blood Cells.*
9. HOFMANN, W. *On Leaving the Bed Early after Operation.*
10. JÜNGERICH, W. *Acetone in the Treatment of Proctitis.*
11. FRÄNKEL, E. *The Use of the Abderhalden Test in Carcinoma and Tuberculosis.*

1. Moro's original article, describing a "recurrent umbilical colic" in children, of a more or less neurotic etiology and curable by medical and suggestive therapeutics, was recently refuted by Küttner, who reported several such cases, all of which, he claims, were cured by appendectomy. In an answer to Küttner's statements, Moro reasserts his former opinions which are briefly as follows: Children are subject to these attacks; (1) the pain occurs with great regularity in the region of the umbilicus; (2) the attacks are always without fever and recur often; (3) the patients are usually hypersensitive, of a sort of angioneurotic nature, and have usually been improperly trained and brought up; and (4) they can be cured by dietetic and pedagogic reforms, together with suggestion.

2. This is another article on the above subject contradicting Küttner's statement that the appendix is the cause of this so-called umbilical colic. Friedjung had, even before Moro, described some years ago in an exhaustive article an hysteric or neuropathologic condition in childhood which manifested itself in this way. He says that the appendix is not at fault, and that he has been able to cure them with such treatment as tincture of valerian and suggestion, as thoroughly as Küttner has with appendectomy.

[R. H. M.]

Obituary.

THOMAS DRUSLYN GRIFFITHS, M.D., LOND., D.Sc. OXON.

DR. THOMAS DRUSLYN GRIFFITHS, of Swansea, Wales, who died of pneumonia on April 17, in Bournemouth, England, was born at Hên Plâs, Llan-y-bythyr, Cardiganshire, in 1837. He obtained his preliminary education at the Normal College Swansea, and then was apprenticed for a time to Dr. Michael, a leading practitioner of that city. Later he entered the University of London, where he had a brilliant career as a student, winning medals in anatomy, physiology, and medicine, gold medals in botany and comparative anatomy, the Filliter prize in pathology, and the Atkinson Morley scholarship. In 1862 he received the degree of M.B. with honors in medicine, surgery and midwifery, and in the same year qualified as M.R.C.S. and L. S. A.

In 1863 Dr. Griffiths settled in the practise of his profession at Swansea, where he won an extensive reputation as one of the first exponents in Wales of the new principles of Listerism, and was the first surgeon in that country to aspirate for pleurisy. In 1872 he received from the University of London the degree of M.D. From 1880 to 1885 he served as ophthalmic surgeon to the Swansea General Hospital and was a governor of the University of Aberystwith. He published papers on the pathology and treatment of intestinal wounds, on dermoid ovarian tumors, on the causes and pathology of acquired malpositions of the uterus, and on the treatment of gastric ulcer.

In 1903 Dr. Griffiths was elected president of the British Medical Association, and in 1904 received from Oxford University the honorary degree of D.Sc. He retired in 1913, after fifty years of practice, during which he had been the foremost Welsh surgeon of his day. He is survived by his widow and by several children.

Miscellany.

A COLLECTION OF GREEK SURGICAL INSTRUMENTS.

THERE has recently been presented to Johns Hopkins University a very valuable set of 37 ancient Greek surgical instruments, originally discovered near the site of Kolophon, in Ionia, and for some time in the possession of the Dutch vice consul at Smyrna. These instruments, now on exhibition in England, prior to being sent to Baltimore, are thus described in a recent issue of the London *Times*.

"The instruments show a type of workmanship unequalled in any other extant specimens and generally reveal the very great progress in surgery which the ancients achieved. The date, though somewhat uncertain, is probably the first or second century A.D.; it is possible, however, that it may have been before the Christian era.

"With two exceptions all the instruments are of bronze. The blades of the knives were originally of steel, but in each case this metal has been almost completely destroyed by oxidation. Among the collection is a large 'beaker,' made of purple glass and decorated. When discovered, it was broken into fragments; these, however, have now been united. The idea entertained is that this was the drinking cup of the physician, or possibly the vessel used for pouring libations at his tomb.

"It is an interesting fact that in ancient times knives were made either of stone or bronze. This custom was followed, not because iron was unknown, but because that metal was held in superstitious fear,—a fear which lingered into the Christian era. According to Plutarch it was actually unlawful to introduce any iron implement into a Greek temple, and no Roman priest might be shaved by an iron razor or iron scissors. Surgical knives however, had steel blades. Nevertheless, even these bore, on the opposite side from the actual blade, a leaflike projection of bronze with two edges,—a survival of the earlier bronze blade, preserved, apparently, for ceremonial reasons. Each of the six knives (or rather knife handles) in the collection shows a groove for the steel blade which it originally possessed. It is probable that, as in modern instances, the shapes of the blades differed considerably to suit different operations.

"Among the five pairs of forceps is a large and beautifully made instrument, the handles of which are shaped to represent two dolphins. This is probably a pair of polypus forceps. The 'bite' of the teeth is strong and close. Another interesting pair of forceps is that used for extracting arrow and lance heads from wounds. This pair somewhat closely resembles modern bone forceps, and has artistically modelled handles and blades which possess strong teeth for gripping.

"An elevator for raising depressed bone is another interesting exhibit. Its presence in the collection would seem to prove that after battle efforts must have been made to treat surgically even the most serious wounds of the skull.

"Another and still more remarkable brain instrument is the drill-bow for operating a skull trephine. This instrument proved a very great puzzle at first, and was supposed to represent some sort of measuring appliance. Research, however, has shown that it is a bow, which, when fitted in a string, was used to rotate a bone drill or skull trephine—very much as drills and trephines are still, occasionally, rotated. The British Museum possesses the only other specimen of the drill-bow extant; until the discovery at Kolophon was made, the nature of that instrument was not known.

"Far from being a triumph of modern surgery, skull trephining or trepanning is a very ancient manoeuvre. Skulls have been discovered again and again showing trephine openings, and the natives of the South Sea Islands are actually known to practise the operation. In classic times this was not undertaken, as at present, to relieve pressure, but to allow exit to the evil spirit supposed to be troubling an insane or epileptic patient.

"The collection also includes a tenaculum, or sharp hook, similar to those in everyday use, a number of catheters of beautiful workmanship and shaped like modern instruments of the same type, a scoop, or curette, for gynecological and other work (Hippocrates speaks of such an instrument), a cautery for burning wounds, a couple of probes exactly like the modern ones, a couple of spatulae or spoons, a needle-holder, and a bronze box intended, evidently, as an instrument case. In addition there is a slab of Egyptian porphyry for mixing ointments upon, and a well-constructed pair of scales, still in excellent equipoise.

"Some cupping vessels were also discovered. The method of using these was to ignite a piece of dry linen placed inside of them and then apply them to the skin. As the heated air within cooled it contracted and sucked the skin into the neck of the cup."

THE MAGGOT TRAP A POSSIBLE SOLUTION OF THE FLY PROBLEM.

A trap to destroy the maggots of the typhoid or housefly before they develop into winged insects, is a possible solution of the fly problem and one that should interest health officers, sanitarians and others who might make use of it on manure heaps, where this common pest breeds. The Department of Agriculture's scientists in their preliminary experiments with such a trap have succeeded in destroying from 70 to 99% of the maggots in a pile of manure. This method of attack differs from those which have been generally used. Fly poisons have been made to tempt the appetite of the adult fly, or fly-tight receptacles have been used to keep the adult female from laying her eggs in manure. The newer method is based on the knowledge of certain habits of the undeveloped fly maggot.

The maggots of the typhoid fly, it has been discovered, have a habit of migrating from their breeding places into drier portions of the manure heap. This seems a distinct move on their part to permit the adult fly to issue from the refuse in the easiest and quickest manner. The efficiency of the new trap is based on the regularity of this deep-seated habit.

The experiments of the department's entomologists showed that with the trap from 98 to 99% of all the maggots in the manure pile were destroyed, if the manure was kept moist. From comparatively dry manure about 70% were destroyed.

These experiments, as yet, have been tried only on a comparatively small scale. The question immediately arises whether the trap, which appears so successful on a small scale can be adapted to the handling of manure in a practical way on a large scale. Every consideration points to the probability that it can and that it will afford "an additional weapon of great value." However, the final verdict as to the value of the maggot trap must wait upon the solution of certain practical problems. To point out some of these here is to suggest lines for further investigation.

ITALIAN DENTISTS AND DENTISTRY.

The following item from a recent issue of the New York *Times* describes the present status of dentistry and dentists in Italy.

"With general progress and consequent increase in wealth, the practise of modern dentistry is growing throughout Italy. The United States is looked to there, as in all foreign countries, as the alma mater of this profession. The Italian dentist has supplied himself with the latest and best instruments and appliances. All of them prefer American-made supplies, though, by reason of higher cost, American instruments and appliances are not yet general, but the demand is increasing, as few such instruments and appliances are made in Italy.

"Italy has only one school, the Istituto Stomatologico Italiano, in Milan, where dentistry is taught. The laws now regulating the practise of dentistry in Italy were passed in 1912, and they provide that no one shall be permitted to engage in this profession who has not received a diploma in medicine and surgery. Therefore, to matriculate at this school the appplicant must have graduated in medicine and surgery from one of the recognized universities. As the minister of public instruction is authorized by these enactments to establish departments for the study of dentistry in all schools where medicine is taught, Italy may soon have a number of dental colleges. Under these laws any person who, on March 31, 1912, had been engaged in dentistry in Italy for eight years or more, is permitted to continue in the exercise thereof for one year, but is prohibited from doing so thereafter, unless within this year he passes the prescribed examination in dental pathology, anatomy and physiology.

"There were in all Italy in the year 1906 only 750 dentists. This number increased to 1200 in 1912. At Leghorn, with a population of 100,000 inhabitants, there were only four dentists in 1903; now there are twice that number there.

"Dental inspection and treatment is provided free for the children attending the public schools of some of the larger cities. An examination made in the public schools of Leghorn by a local dentist resulted in a report that sixty per cent. of the attending children needed treatment."

Correspondence.

PERKINS'S TRACTORS.

New York, May 1, 1914.

Mr. Editor: These metallic tractors gave rise to a medical delusion which prevailed in this country and Europe about a hundred years ago. They were used for the relief of pain and disease by Dr. Elisha Perkins (1745-1799), an eminent physician, president for a long time of the Connecticut Medical Society. They were hammered out of iron and brass, flat on one side and half round on the other, and came in pairs,

Perkins's Tractors.

"the white" and "the yellow." The accompanying photo-engraving shows very nearly their size. It was reported that many cures were effected by drawing them over the affected part, and the inventor believed that he had made an important medical discovery. After his death the treatment was widely advertised, and the tractors were sold in large numbers, the price in London in 1802 being five guineas. They gave rise to the poem, "Terrible Tractoration," and also to a number of books discussing at great length the merits of the new treatment. In 1884 four of them were found in the house of my grandfather at Plymouth, Massachusetts, where he was a minister, early in the last century. They had lain undisturbed for many years in a cupboard, and were tied up with old-fashioned hat pins and hair pins. I kept them several years without knowing their significance till I happened to see a pair framed and carefully preserved in the library of the New York Academy of Medicine. It seems desirable to print a picture of these curios as doubtless specimens are to be found in cupboards and bureau drawers of old houses in this country and England. I am told that those first made were stamped with numbers, and that letters patent to Dr. Perkins, signed by President Washington, are held by descendants of the inventor residing at Springfield, Mass.

Yours truly,

A. B. Judson, M.D.

MEDICAL JUDGES.

Boston, Mass., May 5, 1914.

Mr. Editor: In the issue of the Journal for April 16 you commented on a bill that was before the Senate at Albany, "providing for a medical judge in each county whose duty it shall be to attend any trial at which medical evidence is taken concerning the sanity of a party to an action and give medical advice to court and jury. The medical judge's instructions are to have the same weight as those of a trial judge."

It would seem that such a measure would make for expediency and justice in the trial of cases involving the question of the sanity of the transgressor. The physician-judge, by limiting the technicalities that are so often injected into such trials, would increase the advantageousness of the alienists' expert testimony. The result would be a speedy crystalization of the facts concerning the case followed by a just and humane disposition of same.

Medical judges might sit not only in the above type of case in which there is a question as to whether or no the criminal is feigning insanity to evade due punishment, but he might also sit at commitment cases. At the latter cases his services might be of especial value in detecting cases not suitable for commitment.

I do not wish it inferred that I mean to insinuate that our judges are not men of high moral integrity and of alert and vigilant mentalities, but I do contend that the physician (other requirements such as maturity, age, etc., being equal, of course) by virtue of the pertinent training and experience he has received, is inherently and eminently qualified to do justice to this sort of work.

To be sure, this would be a new field for the physician, but there is not any reason why he would not be superbly successful in it.

Very respectfully and faithfully yours,

Gaetano Praino, M.D.

UNITED STATES CIVIL-SERVICE EXAMINATIONS.

TECHNICAL ASSISTANT IN PHARMACOLOGY (MALE).

June 1, 1914.

The United States Civil Service Commission announces an open competitive examination for technical assistant in pharmacology for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Division of Pharmacology, Hygienic Laboratory, Public-Health Service, at salaries ranging from $1800 to $2000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will consist of research work in pharmacology, including original investigations in the physiological assay of drugs and of the action of drugs by means of the electro-cardiograph.

Applicants should have a reading knowledge of French and German.

An educational training, including a degree of Doctor of Medicine from an institution of recognized standing, and at least two years' subsequent experience in experimental pharmacology and physiology, such experience to have included the study, by means of experimental methods, of the action of drugs, are prerequisites for consideration for this position.

Applicants must have reached their twenty-fifth but not their fortieth birth day on the date of the examination.

Persons who meet the requirements and desire this examination should at once apply for Form 304 and special form to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Post Office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Frencisco, Cal.; Customhouse, New York N. Y.; New Orleans, La.; Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on June 1, 1914. In applying for this examination the exact title as given at the head of this announcement should be used.

DENTAL INTERNE (MALE).

June 3, 1914.

The United States Civil Service Commission announces an open competitive examination for dental interne, for men only, on June 3, 1914. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position, at $600 per annum, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The department states that it reserves the right to terminate the appointment at the expiration of one year of service if it is deemed advisable to do so.

In addition to many interesting cases presented, the dental interne is given an excellent opportunity for study and for doing experimental and research work in the pathological, histological, and other laboratories of the institution.

Applicants are required to be graduates or senior students or regularly incorporated dental colleges, and applications will not be accepted from persons who have been graduates for more than two years. The names of senior students will not be certified for appointment until they have furnished proof of actual graduation.

Applicants must be unmarried.

Persons who meet the requirements and desire this examinations should at once apply for Form 1312 to the United States Civil Service Commission, Washington, D. C. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. In applying for this examination the exact title given at the head of this announcement should be used.

NOTICES.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

Under the auspices of the Boston City Federation, the American Society for the Control of Cancer will conduct a meeting at Huntington Hall, 491 Boylston Street, on Tuesday, May 19, at 3 p. m.

PROGRAM OF MEETING.

Subject: "The Prevention and Control of Cancer." Addresses by:

Mr. F. L. Hoffman, Newark, N. J., Statistician, Prudential Life Insurance Co., "Prevalence and Increase of Cancer in the United States."

Dr. F. S. Simpson, Pittsburgh, Pa., Alleghany General Hospital, "Work and Purposes of the A. S. C. C."

Dr. J. C. Warren, Boston, President of the Harvard Cancer Commission, "Education of the Public on the Cancer Problem."

SYMPOSIUM.

What the Public should know about Cancer in order to avoid its suffering and mortality:

About "Cancer of the Digestive Organs," Dr. S. J. Mixter, Surgeon, Massachusetts General Hospital.

About "Cancer of the Breast," Dr. W. W. Chipman, Surgeon, Royal Victoria Hospital, Montreal.

About "Uterine Cancer," Dr. H. C. Taylor, Surgeon to the Roosevelt Hospital, N. Y., Chairman, Publicity Commission, A. S. C. C.

About "External Cancer," Dr. David Cheever, Surgeon to the Peter Bent Brigham Hospital.

Closing remarkes by the Rev. George A. Gordon.

RECENT DEATHS.

DR. NEWTON F. CURTIS, who died recently at Milton, Mass., was born in Camden, Me., on July 13, 1849. He graduated from Bowdoin College in 1871, and in 1873 from the New York College of Physicians and Surgeons. He immediately began the practise of his profession at White Plains, N. Y. He had lived at Milton since his retirement in 1910. He was a member of several New York Medical societies. He is survived by one daughter and by one son.

DR. PAUL EHRHARDT, of New York, died on April 30, in his 59th year. He was a native of Pennsylvania, and was graduated from the medical department of New York University in 1878. He practised first at Lauden, Iowa, and in 1883 removed to New York.

DR. EUGENE F. PEARCE, of Brooklyn, N. Y., died on April 30, in his 56th year. He received his academic education at New York University, and was graduated from the Long Island Medical College in 1883.

DR. JOHN MACCONNELL, who died recently in Boston, was born at Belfast, Ireland, in 1839. After graduating from Trinity College Medical School, Dublin, he migrated to Boston in 1868. In 1872 he became superintendent of the local smallpox hospital, and later was transferred to the board of health, where he became its first vital statistician.